September 2004

Kansas Department of Agriculture
Pesticide and Fertilizer Program; 785/296-3786
109 SW 9th St; Topeka, KS 66612
FAX 785//296-0673

Records Center; 785/296-2263
109 SW 9th St; Topeka, KS 66612
FAX: 785/296-0673
E-Mail: records@kda.state.ks.us

The following copy of selected statutes and regulations is being made available by the Kansas Department of Agriculture for the convenience of the public and is meant to be used only as a reference. While the Kansas Department of Agriculture has made every effort to accurately reproduce these statutes and regulations, they are not the official statutes and regulations of the State. The Kansas Statutes Annotated (K.S.A.), published by the Revisor of Kansas Statutes, and the Kansas Administrative Regulations (K.A.R.), published the Secretary of State should be consulted for the text of the official statutes and administrative regulations of the State.

KANSAS STATUTES ANNOTATED
Chapter 2. – AGRICULTURE
Article 12. – FERTILIZERS

Kansas Fertilizer Law

K.S.A. 2-1201. Definitions. (1) The term "commercial fertilizer" means any substance designed, intended, used or susceptible for use to supply food for plants or to increase crops produced by land, except the following:

(a) Limestone (calcium carbonate),
(b) dolomite (calcium magnesium carbonate),
(c) lime (calcium oxide),
(d) slaked lime (calcium hydroxide),
(e) gypsum (calcium sulphate),
(f) the dung of domestic animals,
(g) compost, and
(h) fertilizer materials. The term commercial fertilizer shall also include specialty fertilizer as defined below.

(2) The term "fertilizer materials" means any substance containing plant food elements or compounds in possession of manufacturers for use in compounding mixed commercial fertilizers.

(3) The term "brand" means the name, number, trademark, trade name or other designation of a commercial fertilizer.

(4) The term "grade" means the minimum percentages of total nitrogen, available phosphoric acid, and soluble potash, stated in the order given in this definition. When applied to mixed or blended fertilizers, whole numbers only shall be given.

(5) The term "person" includes individual, partnership, association, firm and corporation.

(6) The term "secretary" means the secretary of agriculture.

(7) The term "label" means a display of written, printed, or graphic matter upon or affixed to the container in which a commercial fertilizer is distributed, or on the invoice slip or delivery slip with which a commercial fertilizer or custom blended fertilizer is distributed.

(8) The term "custom blended fertilizer" means a fertilizer blended according to specifications furnished by the customers prior to blending.

(9) The term "custom blender" means any person who blends only registered commercial fertilizers at the request of and according to specifications furnished by the customer-purchaser.

(10) The term "specialty fertilizer" means a commercial fertilizer distributed primarily for nonfarm use, such as home gardens, lawns, shrubbery, flowers, golf courses, municipal parks, cemeteries, greenhouses and nurseries, and may include commercial fertilizers used for research or experimental purposes and is not used primarily for application to crops produced for commercial value.

(11) The term "process tankage" means a product made under steam pressure from crude inert nitrogenous materials such as horn, hoof, hair, feathers or other similarly inert nitrogenous matter, for the purpose of increasing the activity of nitrogen. The water-insoluble nitrogen in these products shall test at least 50% by the alkaline method or at least 80% by the neutral permanganate method.

K.S.A. 2-1201a. Custom blender; license; fee; label or delivery slips; contents. Any person desiring to operate as a custom blender shall file an application with the secretary for a license, said application to show the name and address of the applicant and request that a license be issued. The secretary shall issue the license upon receipt of the license fee of twenty-

five dollars ($25), which license shall expire on December 31 of the year issued. A separate license shall be required for each place of business. The person to whom a license has been issued shall not be required to register the grades of custom blended fertilizers made by him or her as provided by K.S.A. 2-1202. Each person selling or distributing custom blended fertilizers shall furnish the customer-purchaser with a label showing the information as required by K.S.A. 2-1204, or shall furnish a label or delivery slip showing the following:

(1) the name and address of the custom blender;
(2) the date;
(3) the weight and guaranteed analysis of each ingredient;
(4) the grade of the custom blended fertilizer;
(5) and in case the custom blended fertilizer contains any ingredient which is injurious to plants,
    (a) the name and percentage of each such active ingredient;
    (b) adequate directions for use; and
    (c) adequate warnings against misuse;

(6) and the minimum percentage or quantity of any other material or plant food element contributing to the value of the commercial fertilizer.

K.S.A. 2-1201b. Custom blenders; unlawful acts; civil penalty. (a) It shall be deemed a violation of K.S.A. 2-1201 and 2-1201a, and amendments thereto, for any person to:

(1) Sell or distribute in this state any custom blended fertilizer when such person does not hold a valid license as required by this act; or

(2) fail to comply with the requirements of K.S.A. 2-1201a, and amendments thereto, and, except as otherwise provided, the provisions of K.S.A. 2-1208, and amendments thereto. Failure to comply with the provisions of subsection (1)(a) of K.S.A. 2-1208, and amendments thereto, shall not be deemed a violation of this section. The penalties as provided in K.S.A. 2-1208, and amendments thereto shall apply to persons as described in this section who fail to comply with the provisions of K.S.A. 2-1208, and amendments thereto.

(b) On and after July 1, 2003, any person or custom blender who violates any provision of article 12 of chapter 2 of Kansas Statutes Annotated, and amendments thereto or the rules and regulations adopted pursuant thereto, may incur a civil penalty in an amount not more than $5,000 per violation. In the case of a continuing violation, every day such violation continues may be deemed a separate violation. Such civil penalty may be assessed in addition to any other penalty provided by law. Any civil penalty assessed pursuant to this subsection is subject to review in accordance with the act for judicial review and civil enforcement of agency actions. The secretary shall remit any civil penalty collected pursuant to this act to the state treasurer in accordance with the provisions of K.S.A. 75-4215, and amendments thereto. Upon receipt of each such remittance, the state treasurer shall deposit the entire amount in the state treasury to the credit of the state general fund.

K.S.A. 2-1202. Registration; application; annual fee; revocations; tonnage reports. (1) Application for registration shall be filed with the secretary and shall set forth:

(a) The brand and grade of the commercial fertilizer;
(b) the name and address of the person making application for registration of the commercial fertilizer;
(c) the guaranteed analysis including:
    (A) The minimum percentage of nitrogen,
    (B) the minimum percentage of total phosphorus pentoxide (P_2O_5), which is more commonly known and which shall be shown as total phosphoric acid;
    (C) the minimum percentage of available phosphorus pentoxide (P_2O_5), which is more commonly known and which shall be shown as available phosphoric acid;
    (D) the minimum percentage of dipotassium oxide (K_2O), which is more commonly known and which shall be shown as water soluble potash;
    (E) the kind and minimum percentage of any and all other plant food elements or compounds contributing to the value of the commercial fertilizer, expressed separately;
    (F) a statement authorizing the secretary or an authorized representative of the secretary to examine all records of the applicant necessary for the purpose of verifying and determining the inspection fee; and
    (G) such other information as may be prescribed by rules and regulations. The total phosphoric acid need not be shown on the application for registration of commercial fertilizers other than unacidulated mineral phosphatic materials, basic slag, bone, tankage, and other natural organic phosphate materials.

(2) If the application meets the requirements of this act, and the person making application shall pay a registration fee of $5 for each commercial fertilizer, the secretary shall register each such product. Such registration may be revoked for failure to comply with requirements of article 12 of chapter 2 of the Kansas Statutes Annotated, and amendments thereto. All registrations shall expire on June 30 of each year. Each person who secures registration of a commercial fertilizer shall semiannually submit to the secretary a written statement of the tonnage of each kind or grade of commercial fertilizer, shipped to or sold within this state. The registrant shall not be required to report direct shipments of commercial fertilizer and fertilizer materials to fertilizer manufacturers or mixers, but such fertilizer manufacturers or mixers shall report this tonnage of such commercial fertilizers shipped, sold or distributed by them in this state and not used in manufacturing processes. Such statements shall respectively include all shipments or sales for the six-month periods beginning July 1 to and including December 31, and six-month periods beginning January 1 to and including June 30. The secretary may cancel the registrations of any person failing to file the tonnage statement within 30 days from the date of the close of each period. The

secretary may grant a reasonable extension of time. Information furnished to the secretary shall not be disclosed in such a way as to divulge the operations of any person.

K.S.A. 2-1204. Labeling. (1) Every package or container of commercial fertilizer shall bear a distinctly printed label in the English language on a tag attached to the package or container, or distinctly printed on the package or container. The label shall show and state:

(a) The name and address of the person registering the commercial fertilizer;
(b) the brand and grade of the commercial fertilizer;
(c) the net weight in the package or container;
(d) the registered guaranteed analysis. The guaranteed analysis shall include the minimum percentages of plant foods in the following order and form:

Nitrogen, minimum . . . . . ____ percent
Available phosphoric acid, minimum . . . . . ____ percent
Soluble potash, minimum . . . . . ____ percent,

except (A) unacidulated mineral phosphatic materials and basic slag shall show the guaranteed analysis in the following order and form:

Total phosphoric acid, minimum . . . . . ____ percent
Available phosphoric acid, minimum . . . . . ____ percent

Fineness of grind: ____ percent through mesh screen, and (B) bone, tankage, and other natural organic phosphate materials shall show the guaranteed analysis in the following form:

Total phosphoric acid, minimum . . . . . ____ percent;

(e) commercial fertilizers containing any ingredient which is injurious to plants, shall be labeled to show, (A) the name and percentage of each such active ingredient; (B) adequate directions for use, and (C) adequate warnings against misuse;
(f) the minimum percentage of any and all other plant food elements or compounds contributing to the value of the commercial fertilizer; and
(g) such other information as may be prescribed by rules and regulations.

(2) Bulk lots shall be accompanied by a label which shall be delivered to the purchaser showing the information required by this section.

(3) No commercial fertilizer, except a specialty fertilizer, shall contain or be manufactured from process tankage.

K.S.A. 2-1205. Commercial fertilizers; inspection fee, increase or decrease in amount; records and reports; revocation of registration; penalties; disposition of moneys received. An inspection fee shall be collected upon all commercial fertilizers sold, offered or exposed for sale, or distributed in Kansas, which shall be at a rate per ton of 2,000 pounds fixed by rules and regulations adopted by the secretary of agriculture, except that such rate shall not exceed $1.67 per ton of 2,000 pounds. The secretary of agriculture may adopt rules and regulations establishing the inspection fee rate under this section. Each person registering any commercial fertilizer shall pay the inspection fee on such commercial fertilizer sold, offered or exposed for sale, or distributed in Kansas. Each such person shall keep adequate records showing the tonnage of each commercial fertilizer shipped to or sold, offered or exposed for sale, or distributed in Kansas. The secretary, and duly authorized representatives of the secretary, shall have authority to examine such records and other pertinent records necessary to verify the statement of tonnage.

Each person registering any commercial fertilizer shall file an affidavit semiannually, with the secretary, within 30 days after each January 1 and each July 1, showing the tonnage of commercial fertilizer sold or distributed in Kansas for the preceding six-month period. Each such person shall pay to the secretary the inspection fee due for such six-month period, except that the registrant shall not be required to pay the inspection fee or report the tonnage of commercial fertilizers or fertilizer materials sold and shipped directly to fertilizer manufacturers or mixers. The fertilizer manufacturers or mixers shall keep adequate records of the commercial fertilizers sold or distributed in this state, and report to the secretary the tonnage and pay the inspection fee due. If the affidavit is not filed and the inspection fee is not paid within the 30-day period, or if the report of tonnage is false, the secretary may revoke the registrations filed by such person. If the affidavit is not filed and the inspection fee is not paid within the 30-day period, or any extension thereof granted by the secretary, a penalty of $5 per day, or commencing on July 1, 2002, and ending on June 30, 2010, a penalty of $10 per day shall be assessed against the registrant and the inspection fee and penalty shall constitute a debt and become the basis for a judgment against such person. The secretary may grant a reasonable extension of time.

The secretary of agriculture is hereby authorized and empowered to reduce the inspection fee by adopting rules and regulations under this section whenever the secretary determines that the inspection fee is yielding more than is necessary for the purpose of administering the provisions of this act as listed below and the plant pest act. The secretary is hereby authorized and empowered to increase the inspection fee by adopting rules and regulations under this section when it finds that such is necessary to produce sufficient revenues for the purposes of administering the provisions of this act, except that the inspection fee shall not be increased in excess of the maximum fee prescribed by this section. The secretary shall remit all moneys received by or for the secretary under article 12 of chapter 2 of Kansas Statutes Annotated, and amendments thereto, to the state treasurer in accordance with the provisions of K.S.A. 75-4215, and amendments thereto. Upon receipt of each such remittance, the state treasurer shall deposit the entire amount in the state treasury and shall credit such remittance as follows:

(1) An amount equal to $1.40 per ton shall be credited to the state water plan fund created by K.S.A. 82a-951, and amendments thereto;

(2) an amount equal to $.04 per ton shall be credited to the fertilizer research fund;

(3) commencing July 1, 2002, and ending on June 30, 2010, an amount equal to $.05 per ton shall be credited to the fertilizer and pesticide compliance and administration fund; and (4) the remainder shall be credited to the fertilizer fee fund. All expenditures from the fertilizer fee fund shall be made in accordance with appropriation acts upon warrants of the director of accounts and reports issued pursuant to vouchers approved by the secretary of agriculture or by a person or persons designated by the secretary.

K.S.A. 2-1206. Inspections; evidence; stop sale orders; judicial review. (a) The secretary and authorized representatives of the secretary shall make such inspection of commercial fertilizers as may be deemed necessary to ascertain whether manufacturers and others are complying with all of the provisions of this act. The secretary or authorized representatives of the secretary shall procure annually samples of commercial fertilizer and cause analyses to be made. A certified statement of the results of such analysis shall be prima facie evidence in any action within the state of Kansas concerning such commercial fertilizer.

(b) The secretary or a duly authorized representative of the secretary, acting as the enforcing officer, may issue and enforce a written or printed stop sale order to the owner or custodian of any quantity of any commercial fertilizer which the secretary or duly authorized representative determines is not registered, is not labeled as required, is misbranded or bears a false or misleading statement on the application for registration, the label or the accompanying advertising in violation of the provisions of the statutes contained in article 12 of chapter 2 of the Kansas Statutes Annotated and amendments thereto, or any rules and regulations adopted thereunder. The stop sale order shall prohibit further sale and movement of such commercial fertilizer, except on approval of the enforcing officer, until the enforcing officer has evidence that the law and rules and regulations have been complied with and issues a release from the stop sale order. Any stop sale order issued pursuant to this subsection is subject to review in accordance with the act for judicial review and civil enforcement of agency actions. The provisions of this subsection shall not be construed as limiting the right of the enforcement officer to proceed as authorized by other provisions to the statutes contained in article 12 of chapter 2 of the Kansas Statutes Annotated and amendments thereto.

K.S.A. 2-1207. Samples for inspection; refusal to permit. In sampling commercial fertilizers packed in packages of twenty-five (25) pounds or less, an original unbroken package may be taken as the official sample and the ordinary retail price tendered therefor. When the fertilizer is in packages of over twenty-five (25) pounds in weight, portions for the official sample shall be taken from at least ten packages, if there be that many in the lot. In sampling fertilizers in bulk, not less than ten portions shall be drawn, and these from various parts, so as to represent fairly the whole. The owner of the fertilizer or a representative of the owner may be present, but any refusal by such owner or representative to permit sampling shall be taken as sufficient evidence of violation of the law by him or her.

K.S.A. 2-1208. Violations; misdemeanor; seizure; injunction. (1) It shall be deemed a violation of this act for any person to sell, offer or expose for sale, or distribute in this state any commercial fertilizer or to take or receive from any person in this state any order for any commercial fertilizer, or to directly or indirectly contract with any person for the sale of any commercial fertilizer which commercial fertilizer:

(a) Is not registered;
(b) is not labeled as required by the provisions of this act and the authorized rules and regulations;
(c) bears a false or misleading statement on the application for registration, the label or the advertising accompanying the commercial fertilizer.

(2) It shall be deemed a violation of this act for any person to: (a) Mutilate, destroy, obliterate or remove the label or any part thereof; or do any act which may result in the misbranding or false labeling of any commercial fertilizer; (b) fail or neglect to file the tonnage reports or affidavit or pay the inspection fee as required by this act; (c) impede, obstruct, hinder or otherwise prevent or attempt to prevent the secretary or authorized agents of the secretary in the performance of their duty in connection with the administration of the provisions of this act.

(3) Any person who shall violate any of the provisions of this act or the rules and regulations issued thereunder, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not more than one hundred dollars for the first violation and not less than one or more than five hundred dollars for each subsequent violation.

(4) Any commercial fertilizer not in compliance with the provisions of this act shall be deemed a nuisance and shall be subject to seizure in a proceeding before a court of competent jurisdiction. In the event the said court finds the commercial fertilizer to be in violation of law the court may release the commercial fertilizer, after the filing of a bond by a proper claimant to insure compliance with the order of the court and to insure that the product will be sold or disposed of in compliance with law. The district courts of the state of Kansas shall have jurisdiction to restrain violations of this act by injunction without any criminal proceedings being first initiated.

(5) It shall not be deemed a violation of this act for the secretary or authorized representatives of the secretary to remove a label or any part thereof from a package or container of commercial fertilizer as evidence in connection with the administration of the provisions of this act.

K.S.A. 2-1208a. Notice before prosecution; hearing; cancellation of registration; reports to county attorney. (On or after July 1, 2005, KSA 2-1208a is hereby amended to read as follows**.)**

(a) If it shall appear to the secretary or an authorized representative of the secretary from examination or analysis of an official sample of a commercial fertilizer that the commercial fertilizer is falsely labeled or fails to comply with the provisions of

this act, the secretary shall cause notice to be given to the person in possession of the commercial fertilizer and the registrant that a hearing in relation thereto will be held at a date and place named in said notice. Whereupon the secretary or a presiding officer from the office of administrative hearings shall hold a hearing in accordance with the provisions of the Kansas Administrative Procedure Act.

(b) If it is established at the hearing to the satisfaction of the secretary or a presiding officer from the office of administrative hearings, that any commercial fertilizer has been registered in error, or has been sold in violation of any of the provisions of this act, or that any provision of this act has been violated, the secretary shall have power to cancel the registration of such brand or brands of commercial fertilizer, and may report the facts to the proper prosecuting attorney and furnish that officer with an official report of the record of such hearing and a copy of the result of any analysis or other examination which may have a bearing on the case. Prosecution may be instituted under the provisions of this act in the district court of the county where the offense is alleged to have been committed, upon complaint of the secretary or an authorized representative of the secretary or any citizen of this state, or by any county attorney and shall be prosecuted by the county attorney in the name of the state of Kansas.

K.S.A. 2-1209. Publication of reports. The secretary of agriculture shall at the secretary's discretion publish a report of the analysis of official samples of commercial fertilizer, a list of the commercial fertilizers registered in this state with their guaranteed composition, and such other information as may be deemed valuable to the public concerning fertilizers and their use.

K.S.A. 2-1209a. Invalidity of 2-1201 to 2-1209. Should it be decided upon final judicial hearing that any section or clause of this act is invalid, such decisions shall only apply to the section or clause so found to be invalid and shall not invalidate the entire act.

K.S.A. 2-1210. Trademarks; change of analysis; rules and regulations. The secretary shall refuse to register any commercial fertilizer under a name, brand or trademark which may appear to be misleading or deceptive. The secretary shall refuse to allow any person to change the guaranteed analysis of any brand of commercial fertilizer registered for sale in this state within the period for which registered. The secretary is hereby authorized and empowered to enforce the provisions of this act, and amendments thereto, and to prescribe and enforce such rules and regulations relating to commercial fertilizers as he or she may deem necessary to carry into effect the full intent and meaning of this act.

K.S.A. 2-1211. Reimbursement for unused tags and stamps. The secretary is hereby authorized to make reimbursement for unused fertilizer tax tags and stamps held by manufacturers and distributors upon receipt by the secretary of such unused tax tags and stamps.

K.S.A. 2-1212. Anhydrous ammonia; regulations. The board is authorized and directed to make and promulgate regulations (a) for the safe handling, storage and transportation of anhydrous ammonia;

(b) for establishment of minimum general safety standards covering the design, construction, location, installation and operation of equipment for the storage, handling and transportation of such product by tank truck, tank trailer, or otherwise, and for the utilization of anhydrous ammonia; and

(c) to modify and amend such regulations to the end that said anhydrous ammonia shall be handled, stored and transported with safety.

Said regulations shall be such as are reasonably necessary for the safety of the public and persons using such material.

K.S.A. 2-1215. Same; power of municipalities to regulate. A municipality or other political subdivision, shall not enact or enforce any ordinance inconsistent with the regulations promulgated and adopted pursuant to this act. Nothing in this act shall in any way impair the power of any municipality or other political subdivision, (1) to prohibit the use of land for anhydrous ammonia storage or handling, or (2) to impose more stringent limitations within its jurisdiction, by zoning regulations, or by building or other regulatory codes.

K.S.A. 2-1216. Same; duties of secretary; employees. It shall be the duty of the secretary (1) to administer this act, and the rules and regulations adopted thereunder, and (2) to employ the necessary personnel. Such employees are hereby authorized and directed to inspect the facilities and equipment used in the handling, storage and transportation of anhydrous ammonia.

K.S.A. 2-1217. Same; inspection of facilities and equipment; duties of employees, owners and operators. For the purposes of administering this act, the administrative personnel and employees shall have the right to enter private property and to inspect facilities and equipment. It shall be the duty of employees to notify the owner or operator, of any anhydrous ammonia facility or equipment, (1) of any defect or deficiency in the construction, installation or operation of any such facility or equipment, and (2) of any defect or deficiency in the safety equipment or in the use thereof. The owner or operator of such facility or equipment may be given a specified reasonable time within which to comply with the rules and regulations.

K.S.A. 2-1218. Same; unlawful acts. It shall be unlawful, and a violation of this act, for any person;

(a) to operate any anhydrous ammonia facility, any transportation equipment, or to sell or offer to sell any anhydrous ammonia, unless

(1) the product container, piping, valves, hose, appurtenances and equipment are constructed and installed in accordance with the regulations adopted under the provisions of K.S.A. 2-1212, as supplemented and amended; and

(2) the product container, piping, valves, hose, appurtenances and other equipment are adequately maintained; and

(3) the stationary product container is located as required in the regulations adopted pursuant to K.S.A. 2-1212, as supplemented and amended: *Provided*, This subsection shall not apply

(A) to a stationary product container located prior to the adoption of the regulations, or

(B) to a stationary product container properly located at the time of its installation.

(b) To use any product container, piping, valve, hose, appurtenances or other equipment for handling anhydrous ammonia which is defective or which is otherwise unsafe.

(c) To fail to provide or fail to have available, for use such safety material and such effective safety equipment, as required by regulation.

(d) To impede, obstruct or hinder, or to otherwise prevent or to attempt to prevent, any authorized state administrative personnel or employee in the performance of his or her duties in connection with the administration of this act.

K.S.A. 2-1219. Same; penalty for violations; injunctions; jurisdiction; hearings. Any person violating or failing to comply with, any of the provisions of this act, or any rule or regulation adopted thereunder, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not more than five hundred dollars ($500). If any person owning or operating an anhydrous ammonia facility, including transports, tank trailers and applicators, shall fail to make the changes, additions and alterations necessary (a) to correct the defects, and (b) to supply the deficiencies, within the specified time as directed, then the county attorney of the county in which the facility or equipment is located is authorized to file a petition in the district court setting forth the facts and praying for an injunction. The district courts of this state shall have jurisdiction to hear such matters, and may temporarily restrain and temporarily and permanently enjoin the operator or owner from operating such facility or equipment until such time as the defects are corrected and the deficiencies supplied. Before the secretary reports a violation for such prosecution, an opportunity shall be given the person to present his or her views. Nothing in this act shall be construed as requiring the secretary to report for prosecution minor violations of the act whenever the secretary believes that the public interest will be best served by other actions.

K.S.A. 2-1220. Definitions. Unless the context otherwise requires, as used in this act, the following definitions shall apply:

(a) “Person” means any individual, any association of persons or any corporation.

(b) “Anhydrous ammonia” and “product” means the compound formed by the combination of the two gaseous elements, nitrogen and hydrogen, in the proportion of one part nitrogen to three parts hydrogen (by volume), and used or intended for use as an agricultural fertilizer. Anhydrous ammonia is ammonia gas in compressed and liquefied form. It does not include aqueous ammonia which is a solution of ammonia gas in water.

(c) “Department” means the Kansas department of agriculture.

(d) “Secretary” means the secretary of agriculture.

K.S.A. 2-1221. Fertilizer research fund; creation; use of moneys; expenditures. There is hereby created a fertilizer research fund. All moneys credited to the fund shall be expended to the agricultural experiment station under the supervision of Kansas state university for the purpose of conducting research on fertilizers, anhydrous ammonia and related materials concerning efficient methods of application, storage and handling, their effect upon environmental quality, and efficiency and safety in the use of fertilizers, anhydrous ammonia and related materials in crop production. All expenditures shall be made in accordance with the appropriations acts upon warrants of the director of accounts and reports issued pursuant to vouchers approved by the director of the agricultural experiment station of Kansas state university or by a person or persons designated by the director.

K.S.A. 2-1222. Issuance of stop sale or stop use orders. (a) The secretary or a duly authorized representative of the secretary, acting as the enforcing officer, may issue and enforce a written or printed stop sale or stop use order to the owner or custodian of any facility or equipment used for the storage, handling or transportation of anhydrous ammonia which the secretary or duly authorized representative determines is not in compliance with the provisions of K.S.A. 2-1212 through 2-1220, and amendments thereto, or any rules and regulations adopted thereunder. The stop sale or stop use order shall prohibit the sale of anhydrous ammonia or prohibit further use of such facility or equipment for the handling, storage or transportation of anhydrous ammonia, except on approval of the enforcing officer, until the enforcing officer has evidence that the law and rules and regulations have been complied with and issues a release from the stop sale or stop use order. Any stop sale or stop use order issued pursuant to this subsection is subject to review in accordance with the act for judicial review and civil enforcement of agency actions. The provisions of this subsection shall not be construed as limiting the right of the enforcement officer to proceed as authorized by other provisions of the statutes contained in article 12 of chapter 2 of the Kansas Statues Annotated, and amendments thereto.

(b) This section shall be part of and supplemental to provisions of K.S.A. 2-1212 through 2-1220, and amendments thereto.

HANDLING, STORAGE AND DISPOSAL OF COMMERCIAL AND BULK FERTILIZERS

K.S.A. 2-1226. Definitions. As used in this act: (a) "Commercial fertilizer" shall have the meaning ascribed to such term under K.S.A. 2-1201 and amendments thereto.

(b) "Fertilizer materials" shall have the meaning ascribed to such term under K.S.A. 2-1201 and amendments thereto.

(c) "Bulk fertilizer" means any liquid, blended or dry fertilizer or fertilizer material stored in a fluid or dry nonpackage form.

(d) "Facility" means a place where commercial fertilizer materials are stored, mixed, blended, manufactured, weighted or handled.

(e) "Deparment" means the Kansas department of agriculture.

(f) "Secretary" means the secretary of agriculture.

(g) "Person" means any individual, partnership, association of persons, governmental agency or corporation.

K.S.A.2-1227. Rules and regulations. The secretary is authorized to adopt rules and regulations: (a) For the safe handling and storage of commercial fertilizers and fertilizer materials in bulk;

(b) for the establishment of minimum general standards covering the design, construction, location, installation and operation for the storage and handling of commercial fertilizer and fertilizer in bulk and the prevention of commercial fertilizer, fertilizer materials or fertilizer in bulk from being introduced into the ground or surface waters of the state;

(c) for the establishment of minimum general standards covering the design, construction, location and installation of a structure constructed for the purpose of confining any spills or discharged fertilizer or fertilizer material within a specified area;

(d) for the prompt recovery of fertilizer or fertilizer materials spilled within a specified area;

(e) for dates by which the owners or operators, or both, of facilities and equipment subject to the provision of this act and in existence prior to the effective date of this act shall comply with this act;

(f) for the issuance of a stop sale order or stop use order, pursuant to K.S.A. 2-1232; and

(g) for the administration of this act.

K.S.A. 2-1228. Approval of construction or alteration by the secretary; transferable. (a) A person beginning construction of or substantial alteration to an existing facility or equipment used for the manufacture, blending, handling or bulk storage of commercial fertilizer or fertilizer materials shall apply to the secretary, on forms provided by the secretary, for approval of such construction or alteration. The person shall provide the secretary with such information as the secretary deems necessary. The secretary shall approve the construction or alteration of the facility or equipment if such construction or alteration is consistent with the standards and other requirements established by rules and regulations under K.S.A. 2-1227, and amendments thereto.

(b) The approval shall be transferable from the owner issued the approval to another owner if the new owner notifies the department within 30 days after the facility has changed ownership. Approval shall not be transferable from one location to another.

(c) The owner or operator of a facility or equipment used for the manufacture, blending, handling or bulk storage of commercial fertilizer or fertilizer materials established prior to the effective date of this act shall obtain the secretary's approval of the facility or equipment according to the dates specified in rules and regulations.

K.S.A. 2-1229. Secretary's right to enter property; notice; compliance. For the purposes of administering this act, the secretary or a person or persons designated by the secretary shall have the right to enter private property and to inspect facilities and equipment. It shall be the duty of the secretary or any such designated person or persons to notify the owner or operator of any facility or equipment: (1) Of any defect or deficiency in the construction, installation or operation of any such facility or equipment; and (2) of any defect or deficiency in the safety equipment or in the use thereof. The owner or operator of such facility or equipment may be given a specified reasonable time within which to comply with the rules and regulations.

K.S.A. 2-1230. Unlawful acts. It shall be unlawful, and a violation of this act, for any person: (a) To operate any facilities or equipment unless:

(1) The facilities and equipment are constructed and installed in accordance with the rules and regulations adopted under the provisions of K.S.A. 2-1227 and amendments thereto; and

(2) the facilities and equipment are adequately maintained; and

(3) the facilities and equipment are approved under K.S.A. 2-1228 and amendments thereto.

(b) To use any product container, piping, valve, hose, appurtenances or other equipment for handling and storage of commercial fertilizer and fertilizer materials which is defective or which is otherwise unsafe.

(c) To fail to provide, or fail to have available, for use such safety material and such effective safety equipment, as required by rules and regulations.

(d) To violate any rule and regulation adopted under K.S.A. 2-1227 and amendments thereto.

(e) To impede, obstruct or hinder, or to otherwise prevent or to attempt to prevent, any authorized state personnel or employee in the performance of duties in connection with the administration of this act.

(f) To fail to comply with a stop sale order or stop use order issued pursuant to K.S.A. 2-1232.

K.S.A. 2-1231. Penalties; injunction. Any person violating or failing to comply with any of the provisions of this act, or any rule and regulation adopted under this act, shall be guilty of a class B misdemeanor. If any person owning or operating a facility or equipment used for manufacture, blending, handling or bulk storage of commercial fertilizer or fertilizer materials fails to make the changes, additions and alterations necessary to correct any defects or to correct the deficiencies, within the specified time as directed, then the county or district attorney of the county in which the facility or equipment is located shall seek an injunction.

K.S.A. 2-1232. Secretary may issue a stop sale or stop use order; judicial review. (a) The secretary or a duly authorized representative of the secretary, acting as the enforcing officer, may issue and enforce a written or printed stop sale order or stop use order when there is reason to believe, based on inspections or tests, that the facility or equipment for the transporting, handling, distributing, dispensing, selling, storage or disposal of commercial fertilizer or bulk fertilizer has been, is currently or intends to be in violation of any provision of K.S.A. 2-1226 through 2-1231, and amendments thereto, or the rules and regulations adopted thereunder.

(b) The stop sale order or stop use order shall prohibit further sale of commercial fertilizer or bulk fertilizer or prohibit further use of such facility or equipment for the transporting, handling, distributing, dispensing, selling, storage or disposal of commercial fertilizer or bulk fertilizer, except in accordance with the provisions of the order or on approval of the enforcing officer, until the enforcing officer has evidence that the law and rules and regulations have been complied with and issues a release from the stop sale order or stop use order.

(c) The stop sale order or stop use order may be issued to any person who runs, controls, operates or has custody of any facility or equipment or may be posted in a conspicuous place in, on or about the facility or equipment affected by the order.

(d) Any order issued pursuant to this subsection is subject to review in accordance with the act for judicial review and civil enforcement of agency actions.

(e) The provisions of this subsection shall not be construed as limiting the right of the enforcing officer to proceed as authorized by other provisions of the statutes contained in article 12 of chapter 2 of the Kansas Statutes Annotated and amendments thereto.

K.S.A. 2-1233. Fertilizer and pesticide compliance and administration fund. There is hereby created a fertilizer and pesticide compliance and administration fund. All moneys credited to the fund shall be expended to the fertilizer and pesticide program under the supervision of the secretary of agriculture for the purpose of administration and assuring compliance with the applicable provisions of Kansas law. All expenditures shall be made in accordance with the appropriations acts upon warrants of the director of accounts and reports issued pursuant to vouchers approved by the secretary of agriculture or by a person designated by the secretary.

K.S.A. 2-1234. Storage of liquid fertilizers; mobile containers; requirements. If the secretary of agriculture does not adopt a revised regulation related to storage of liquid fertilizer in mobile containers prior to February 1, 2003, then the requirements provided in K.A.R. 4-4-900 et seq. shall be applicable to each mobile container or combination of mobile containers which has a combined capacity of 2,000 gallons or more which is used to store liquid fertilizer for more than 60 consecutive days.

K.S.A. 74-568. State board of agriculture and secretary of the state board of agriculture abolished; transfer of powers and duties to the department of agriculture and secretary of agriculture.

(a) The state board of agriculture created by K.S.A. 74-503, and amendments thereto, and the office of the secretary of the state board of agriculture created by K.S.A. 74-503, and amendments thereto, are hereby abolished.

(b) Except as otherwise provided by this act, all of the powers, duties and functions of the existing state board of agriculture and the existing secretary of the state board of agriculture are hereby transferred to and conferred and imposed upon, the department of agriculture and the secretary of agriculture established by this act.

(c) Except as otherwise provided by this act, the department of agriculture and the secretary of agriculture established by this act shall be the successor in every way to the powers, duties and functions of the state board of agriculture and the secretary of agriculture in which the same were vested prior to the effective date of this act. Every act performed in the exercise of such powers, duties and functions by or under the authority of the department of agriculture or the secretary of agriculture established by this act shall be deemed to have the same force and effect as if performed by the state board of agriculture or the secretary of the state board of agriculture, respectively, in which such powers, duties and functions were vested prior to the effective date of this act.

(d) Except as otherwise provided by this act, whenever the state board of agriculture, or words of the like effect, is referred to or designated by a statute, contract or other document, such reference or designation shall be deemed to apply to the secretary of agriculture established by this act.

(e) Except as otherwise provided by this act, whenever the secretary of the state board of agriculture, or words of like effect, is referred to or designated by a statute, contract or other document, such reference or designation shall be deemed to apply to the secretary of agriculture established by this act.

(f) All rules and regulations of the state board of agriculture or the secretary of the state board of agriculture in existence on the effective date of this act shall continue to be effective and shall be deemed to be duly adopted rules and regulations of the secretary of agriculture by this act until revised amended or nullified pursuant to law.

(g) All rules and regulations of the division of water resources of the state board of agriculture or the chief engineer of the division of water resources of the state board of agriculture in existence on the effective date of this act shall continue to

be effective and shall be deemed to be duly adopted rules and regulations of the chief engineer of the division of water resources of the department of agriculture established by this act until revised, amended, revoked or nullified pursuant to law.

(h) All orders and directives of the state board of agriculture or the secretary of the state board of agriculture in existence in the effective date of this act shall continue to be effective and shall be deemed to be orders and directives of the secretary of agriculture established by this act, until revised, amended or nullified pursuant to law.

(i) On the effective date of this act, the secretary of agriculture shall succeed to whatever right, title or interest the state board of agriculture has acquired in any real property in this state, and the secretary shall hold the same for and in the name of the state of Kansas. On and after the effective date of this act, whenever any statute, contract, deed or other document concerns the power or authority of the state board of agriculture or the secretary of the state board of agriculture to acquire, hold or dispose of real property or any interest therein, the secretary of agriculture shall succeed to such power or authority.

(j) The secretary of agriculture established by this act shall be continuations of the state board of agriculture and the secretary of the state board of agriculture.

KANSAS ADMINISTRATIVE REGULATIONS
Agency 4 – Kansas Department of Agriculture
Article 4. – COMMERCIAL FERTILIZERS

K.A.R. 4-4-1. Micronutrients. Additional plant nutrients, besides nitrogen, phosphorus and potassium, when mentioned or claimed on the label or container shall be registered and shall be guaranteed. Guarantees shall be made on the elementary basis. Sources of the elements guaranteed shall be shown on the application for registration. When claims for such nutrients are made on the label, containers, or application for registration, the minimum percentages which will be accepted for registration. (See table 1.)

TABLE 1

	Percent
Calcium (Ca)	1.00
Magnesium (Mg)	0.50
Sulfur (S)	1.00
Boron (B)	0.02
Chlorine (Cl)	0.10
Cobalt (Co)	0.0005
Cooper (Cu)	0.05
Iron (Fe)	0.10
Manganese (Mn)	0.05
Molybdenum (Mo)	0.0005

	Percent
Sodium (Na)	0.10
Zinc (Zn)	0.05

Guarantees or claims for the above-listed additional plant nutrients are the only ones which will be accepted. Proposed labels and directions for use of the fertilizer shall be furnished with the application for registration upon request. Warning or caution statements are required on the label for any product which contains 0.03 percent or more of boron in a water-soluble form or 0.001 percent or more of molybdenum. Any of the above-listed elements which are guaranteed shall appear in the order listed, immediately following guarantees for the primary nutrients, nitrogen, phosphorus and potassium.

K.A.R. 4-4-2. Inspection fee. The inspection fee for commercial fertilizers shall be $1.67 for each 2,000 pounds.

K.A.R. 4-4-900. Definitions. (a) “Alternative design” means any process or technique for either primary or secondary containment that has been approved by the secretary in accordance with K.A.R. 4-4-956.

(b) “Application equipment” means any equipment used to apply fertilizer to land.

(c) “Appurtenance” means any device used in connection with a bulk fertilizer storage container or bulk fertilizer secondary containment area, structure, or device, including any safety device, liquid-level gauging device, auger, pump, valve, pipe, hose, fitting, and measuring or dispensing device.

(d) “Berm” means a dike, wall, or embankment used to contain liquid fertilizer.

(e) “Bladder tank” means any liquid fertilizer storage system consisting of the following:

(1) An external tank capable of holding the bladder tank’s maximum volume without leakage;

(2) an internal, liquid-tight bladder that obtains its structural support from the external tank and is capable of holding the bladder tank's maximum volume without leakage; and

(3) a permanent cover to prevent the entry of precipitation.

(f) "Blending" means combining fertilizers or fertilizer ingredients to the customer's specifications.

(g) "Bulk fertilizer" means any fertilizer, whether dry or liquid, that is stored in quantities specified in K.A.R. 4-4-900 through K.A.R. 4-4-986.

(h) "Bulk fertilizer storage container" means any receptacle or device in which a bulk fertilizer is stored.

(i) "Bulk fertilizer storage facility" and "facility" mean any warehouse or other area where a bulk fertilizer, either in bulk or bagged, is held for storage. These terms shall include any facility in which fertilizer is mixed, blended, loaded, or unloaded. Each bulk fertilizer storage facility located within 300 feet of another facility owned or operated by the same person shall be considered the same facility for the purpose of determining the number of consecutive days in storage and determining whether the facility is exempt from the requirements of K.A.R. 4-4-900 through K.A.R. 4-4-986.

(j) "Chemically compatible" means that the material will not react adversely with the bulk fertilizer that is being or will be stored, loaded, unloaded, mixed, blended, or otherwise handled.

(k) "Discharge" means any spill, leak, deposit, pumping, dumping, or emptying, whether accidental or intentional, that results in the release of a fertilizer. This term shall not include the lawful transferring, loading, unloading, repackaging, refilling, distributing, using, or disposing of a fertilizer, and the normal washing and rinsing activities on loading areas.

(l) "Dry fertilizer" means any fertilizer that is in solid form before any end-use application or mixing or blending for end-use application. This term shall include formulations including dusts, powders, and granules.

(m) "Elephant ring" means an open-top storage container that serves as a secondary containment vessel into which a smaller primary storage container has been placed.

(n) "Empty storage container" means a bulk fertilizer storage container that has a liquid volume of less than one percent of the container capacity.

(o) "End-use application" means the application of fertilizer to soil or plants in the course of normal agricultural or horticultural practice.

(p) "Existing facility" means any facility already built and either in operation or capable of being in operation on the effective date of these regulations.

(q) "Fertilizer products" means any substance, including rinsates, that contains elements or compounds used to promote the growth of agricultural or horticultural plants.

(r) "Floodplain" means the lowlands and relatively flat areas adjoining inland waters, including flood-prone areas that are inundated by floods and that have a one percent or greater chance of recurring flooding in any given year.

(s) "Flood-proof facility" means a facility that has been constructed and maintained to withstand waters from a 100-year flood event and prevent floodwater from contacting the fertilizer.

(t) "Gallon" means the United States standard measure of one gallon.

(u) "Inspection port" means a secured opening that allows access into the interior of a bulk fertilizer storage container for the purpose of inspection.

(v) "Liquid fertilizer" means any bulk fertilizer in liquid form before dilution for end-use application. This term shall include solutions, emulsions, suspensions, slurries, and gels. This term shall not include anhydrous ammonia.

(w) "Loading pad" means a permanent or portable structure in the operational area designed and constructed to intercept and contain spills, rinse water, and precipitation to prevent runoff and the leaching of fertilizer.

(x) "Low-volume pass-through" means the tonnage of fertilizer transferred away from the facility, during any consecutive 365-day period, below which an operational area shall not be required.

(y) "Mixing" means the combining of fertilizers or fertilizer ingredients into a fertilizer product for resale to nonspecific customers.

(z) "Mobile storage container" means a bulk fertilizer storage container that is used for transportation or temporary storage of bulk fertilizer.

(aa) "Modification" means any change in structures, processes, or activities at a bulk fertilizer storage facility that alters the efficacy of containment
structures or systems, including changes in capacity. Modification to an existing facility shall void any applicable exemption as specified in this article. "Modified" shall describe a fertilizer facility that has any modifications, as defined in this subsection.

(bb) "Operational area" means any area at the fertilizer facility where fertilizers are mixed, loaded, unloaded, or blended, or where fertilizers are washed from application, storage, or transportation equipment.

(cc) "Permanent cessation of operations" means that, for at least 12 consecutive months, the facility has not been used to load, unload, mix, or blend any fertilizers.

(dd) "Plot plan" means a map or diagram showing the general layout of the facility.

(ee) "Primary containment" means the bulk fertilizer storage container that is in direct contact with the fertilizer being stored.

(ff) "Process flow diagram" means a schematic design showing the movement of fertilizer through the facility.

(gg) "Reasonably foreseeable" means what the secretary determines would have been foreseeable at the time the decision affecting the facility or its condition was made. This term shall include consideration of the facility owner's or operator's knowledge of conditions at the time the condition was created or the decision was made.

(hh) "Secondary containment" means any structure, tank, liner, or container that is designed, constructed, and maintained to perform the following:

(1) Intercept, hold, contain, or confine a discharge of fertilizer from primary containment;

(2) prevent runoff; and
(3) avoid leaching.
(ii) “Secretary” means the secretary of the Kansas department of agriculture or the secretary’s authorized representative.
(jj) “Sump” means a recessed reservoir designed to be a receptacle for the collection of liquids.
(kk) “Temporary storage” means the storage of bulk fertilizer for no more than 60 consecutive days.
(ll) “Tip tank” means any tank or combination of tanks that is built on a frame having wheels and that is designed solely for the temporary storage of liquid fertilizer before its transfer to application equipment and not for the transportation of liquid fertilizer.
(mm) “Ton” means 2,000 pounds.
(nn) “Wastewater” means any water that is a result of precipitation collected in the facility or rinsates from cleaning the equipment or facility.

K.A.R. 4-4-901. Storage containers and appurtenances; basic requirements. (a) Each storage container and appurtenance shall be constructed, installed and maintained to prevent the discharge of fluid fertilizer.
(b) Each storage container and appurtenance shall be constructed of materials which are resistant to corrosion, puncture or cracking.
(c) All materials used in the construction or repair of any storage container or appurtenance shall not be of a type which react either chemically or electrolytically with stored fluid fertilizer and which might weaken the storage container or appurtenance, or create a risk of discharge.
(d) All metals used for valves, fittings and repairs shall be compatible with the metal used in the construction of the storage container or appurtenance, so that the combination of metals does not cause or increase any corrosion which might weaken the storage container or any appurtenance, or create a risk of discharge.
(e) Each storage container and appurtenance shall be designed to handle all operating stresses, taking into account static-head, pressure buildup from pumps and compressors, and any other mechanical stresses to which the storage container and appurtenance may be subject in the foreseeable course of operation.
(f) Every storage container connection shall be equipped with a shut-off valve located on the storage container as indicated by standard engineering practice except for any safety relief connection. Shut-off valves shall be left closed and secured except during periods of use.

K.A.R. 4-4-902. Prohibition against underground storage. (a) From and after the effective date of this regulation [January 14, 1991], no person shall construct new storage containers for underground storage of fluid fertilizer. This prohibition does not apply to:
(1) a water tight catch basin used for the temporary collection of runoff or rinsate from transfer and loading areas; or
(2) storage in a stainless steel storage container, or other approved storage container, if:
(A) the storage container is enclosed within an approved liner as required by K.A.R. 4-4-933; and
(B) an approved program of ground water monitoring has been established to detect leakage.
(b) From and after the effective date of this regulation [January 14, 1991], wherever an underground storage container of bulk fertilizer already exists, a leak detection and liquid recovery system shall be installed within the time prescribed by K.A.R. 4-4-952.
(c) The liquid recovery portion of the system shall be located under the lowest area of the storage container and shall contain:
(1) a moisture barrier located below the storage container extending at least to the storage container’s edges and draining into a collection sump;
(2) a collection sump equipped with a liquid activated pump to transfer collected liquid to another storage container located on or above ground level; and
(3) an alarm system which is activated whenever the pump is activated and which remains activated until manually reset.
(d) For purposes of this regulation, the term “underground storage container” includes every storage container having more than 10% of its capacity, including the capacity of any piping, located below the soil surface.
(e) From and after January 1, 1994, no fertilizer shall be stored in an underground storage container.

K.A.R. 4-4-903. Prohibited materials. (a) Storage containers, elephant rings, and appurtenances shall not be constructed of copper, brass, zinc or copper-base alloys unless recommended in writing by the manufacturer.
(b) Storage containers, elephants rings, and appurtenances used for the storage of fluid fertilizers containing phosphates or chlorides shall not be constructed of aluminum alloys unless recommended in writing by the manufacturer.
(c) Storage containers, elephant rings, and appurtenances used for the storage of fertilizer or fluid fertilizer materials which have a pH of five or less shall not be constructed of ferrous materials other than stainless steel unless the ferrous materials have been coated or treated with protective substances adequate to prevent corrosion caused by the substance being stored or unless recommended in writing by the manufacturer.
(d) Storage containers, elephant rings, and appurtenances used for the storage of aqueous solutions of anhydrous ammonia shall not be constructed of galvanized brass or bronze materials and shall not be constructed of mild steel, stainless steel, aluminum, fiberglass, polyolefins or plastic unless recommended by the manufacturer.

(e) Storage containers, elephant rings, and appurtenances used for the storage of phosphoric acid shall not be constructed of ferrous materials other than stainless steel unless the container is lined with a suitable substance to prevent corrosion caused by the substance being stored unless recommended in writing by the manufacturer.

(f) Storage containers, elephant rings, and appurtenances used for the storage of fluid fertilizers containing potassium chloride shall not be constructed of ferrous materials other than stainless steel or mild steel, unless:

(1) the container and appurtenances have been coated or treated with protective substances which are adequate to prevent corrosion resulting from the material being stored; or

(2) unless storage of fluid fertilizers containing potassium chloride in storage containers constructed of ferrous materials other than stainless steel or mild steel has been recommended in writing by the manufacturer of the container; and

(3) the container or appurtenance is used for storage periods of not more than a total of 90 calendar days within any period of 365 consecutive days. In such instances, the storage container shall be completely emptied between storage periods; or

(4) the empty container and appurtenances are cleaned and inspected for leaks prior to being refilled.

K.A.R. 4-4-904. Grounding and anchoring storage containers. Storage containers shall be anchored, as necessary, to prevent flotation or instability which might occur as a result of liquid accumulations within a secondary containment facility constructed in accordance with K.A.R. 4-4- 900 et seq. Metal storage containers shall be grounded when necessary to prevent corrosion or other damage which may be caused by electrolytic reaction with the material being stored.

K.A.R. 4-4-905. Security. (a) All storage containers and appurtenances shall be either locked, located within a fenced enclosure or otherwise adequately secured to provide reasonable protection against vandalism or unauthorized access which might result in a discharge of fertilizer or fertilizer materials.

(b) Valves on storage containers shall be locked or otherwise secured except when persons responsible for facility security are present at the facility.

(c) Valves on nurse tanks and other mobile fertilizer containers parked overnight at a storage facility shall be adequately secured, locked or located within a fenced enclosure except when persons responsible for facility security are present at the facility.

(d) Valves on empty containers need not be secured.

K.A.R. 4-4-906. Filling storage containers. Storage containers shall not be filled beyond the capacity for which they are designed taking into account the density of the fluid being stored and the thermal expansion of the stored material during storage.

K.A.R. 4-4-907. Pipes and fittings. Pipes and fittings shall be adequately supported to prevent sagging and possible breakage due to gravity and other forces which might be encountered in the ordinary course of operations.

K.A.R. 4-4-908. Liquid-level-gauging device. (a) Except as provided in paragraph (b) of this regulation, each storage container shall be equipped with a liquid-level-gauging device by which the level of fluid in the storage container can be readily and reliably measured.

(b) A liquid-level-gauging device shall not be required if the level of fluid in a storage container can be readily and reliably measured by other means approved by the secretary.

(c) Liquid-level-gauging devices shall be locked or secured, in a safe manner, to protect against breakage or vandalism which could result in a discharge.

(d) External sight gauges shall be prohibited unless:

(1) the gauge has a positive shut-off valve constructed from stainless steel;

(2) all pipes or other plumbing components which connect the shut-off valve to the storage container shall be constructed from stainless steel;

(3) the sight gauge's shut-off valve remains closed except when the amount of material stored in the storage container is being determined; and

(4) the shut-off valve is located on the storage container in a location which is readily accessible and which conforms to the storage container manufacturer's specifications.

K.A.R. 4-4-909. Labeling of storage containers. (a) Each storage container or building in which fertilizer or fertilizer materials are stored shall be clearly marked with a description of the contents.

(b) In lieu of marking the building or storage container, a sign containing a written description of the fertilizer or fertilizer materials being stored may be posted outside the container.

(c) All descriptions shall be made in letters at least two inches high.

K.A.R. 4-4-910. Inspection and maintenance. (a) On a regularly scheduled basis, at least monthly, the operator of a storage facility shall:

(1) routinely inspect and maintain storage facilities, storage containers and appurtenances to minimize the risk of a discharge;

(2) inspect valves and other appurtenances for leakage; and

(3) make a written record of all inspections and major maintenance or repair on the day of the inspection, maintenance

or repair.

(b) Inspection and maintenance records shall be kept at the storage site, or at the nearest local office from which the storage site is administered.

(c) For the purposes of this regulation, major maintenance or repair means any repair or maintenance which requires taking the pump appurtenance or storage container affected out of service.

K.A.R. 4-4-911. Operational area containment for fertilizer. (a) Loading Pads.

(1) Each area or pad used for loading fluid bulk fertilizer into storage containers or for unloading fluid bulk fertilizer from storage containers into mobile containers shall be curbed and paved with asphalt, concrete or other similar material approved by the secretary or be otherwise adequately designed to contain and allow recovery of any discharged fertilizer materials resulting from loading or unloading fertilizer materials or rinsates resulting from the cleaning of fertilizer application equipment.

(2) Each area or pad shall be sufficient to hold the entire mobile container during loading or unloading. This pad shall be designed, constructed and maintained to handle all reasonably foreseeable loading conditions to which it is exposed. Cracks and seams shall be kept sealed.

(3) Each area or pad shall be designed to prevent accumulation and overflow resulting from precipitation.

(4) Any cleaning at the storage facility of equipment used to apply fertilizer or fertilizer materials shall be cleaned upon a loading pad or area described in subsections (1), (2) and (3) of this section.

(5) Each facility where 125 tons or more of liquid fertilizer or 25 tons or more of dry fertilizer are received into or transferred out of one or more storage containers located at the facility during any period of 365 consecutive days shall have at least one loading pad or area which complies with the provisions of this regulation.

(b) Catch basins.

(1) The curbed and paved surface of the loading pad or area shall form or drain into a liquid tight catch basin. If the curbed and paved surface of the loading pad or area drains to a sump, the catch basin may include the sump and an aboveground container if a pump is installed which transfers the contents of the sump into the aboveground container.

(2) The curbed surface and catch basin shall be of adequate design and size to contain a combined total of 110% of the largest volume of fertilizer or fertilizer material to be loaded or unloaded or 5,500 gallons of fluid whichever is greater and a minimum of 2,000 gallons of discharged fluid.

(c) Omitted in original.]

(d) Protection of containers and appurtenances. Each storage container and appurtenance, including pipes, shall be protected against any reasonably foreseeable risk of damage by trucks and other moving vehicles engaged in the loading or unloading of bulk fertilizer.

(e) Exceptions.

(1) This regulation shall not apply to the unloading of fertilizer or fertilizer materials from a mobile container into an application device at the site where the fertilizer is to be applied.

(2) In lieu of the requirements of paragraphs (a) and (b) of this regulation, a portable pad or device which provides confinement and allows recovery of fertilizer leaks, spills or other discharged fertilizer and which has been approved by the secretary may be used during the loading and unloading of fertilizer from rail cars.

(3) This regulation shall not apply to the unloading of rail cars directly into a permanent riser or manifold system which has been approved by the secretary as part of storage facility which complies with the requirements of K.A.R. 4-4-900 et seq.

(4) This regulation shall not apply to any storage facility through which a volume of less than 125 tons of liquid fertilizer or less than 25 tons of dry fertilizer is sold or transferred in any period of 365 consecutive days.

(f) Inspection and maintenance.

(1) The operator of every storage facility shall routinely inspect and maintain loading pads and catch basins. These inspections shall be conducted on a regularly scheduled basis at least monthly.

(2) The operator of a storage facility shall make a written record of each inspection and each major maintenance or repair on the day of the inspection, maintenance or repair. Inspection and maintenance records shall be kept at the storage site or at the nearest local office from which the storage site and operational area is administered.

(3)For the purposes of this regulation, major maintenance or repair means any repair or maintenance which requires taking the pump appurtenance or storage container affected out of service.

K.A.R. 4-4-912. Abandoned containers. (a) Each storage container and other container used at a storage facility to hold fluid bulk fertilizer or fertilizer rinsate shall be deemed abandoned if:

(1) it has been out of service for more than six consecutive months because of a weakness or leak;

(2) or it has been out of service for any reason other than nonuse for more than two consecutive years.

(b) Each abandoned underground container, including each abandoned underground catch basin, shall be thoroughly cleaned and removed from the ground or filled with an inert solid. Each connection and vent in such a container shall be disconnected and sealed. A record of the catch basin size, location, and method of closing shall be maintained at the storage facility as provided in K.A.R. 4-4-921.

(c) Each abandoned aboveground container shall be thoroughly cleaned. All hatches on each such container shall be closed, and all valves or connections shall be closed and sealed.

(d) A secondary containment facility shall not be deemed abandoned merely because there have been no discharges into it.

(e) Prior to placing an abandoned container back into service, the container shall have been inspected for compliance with the provisions of K.A.R. 4-4-900 et seq.

(f) For each tank which will remain unused for a period of at least two years, the owner of a fertilizer storage facility shall notify the secretary of the date when the tank is taken out of service and the date it is returned to service.

(g) All records required to be kept pursuant to this regulation shall be made available to the secretary as specified in K.A.R. 4-4-921.

K.A.R. 4-4-920. Storage and handling of dry bulk fertilizer. (a) Dry fertilizer materials shall be stored and handled in a manner which prevents pollution of groundwater by minimizing losses of the dry fertilizer or dry fertilizer materials to the air, surface water, groundwater, or subsoil.

(b) Non-fluid fertilizer or fertilizer materials shall be stored inside a properly designed structure or device with a cover or roof top, sidewalls and base sufficient to prevent fertilizer contact with precipitation and surface waters. Floors and sidewalls shall be strong enough to support the weight of the fertilizer being stored.

(c) All loading, unloading, mixing and handling of dry fertilizer, unless performed in the field where applied, shall be done using a containment method, device, or structure, which is of a size and design that will contain the fertilizer and can be operated to minimize emission of dust, vapors or both beyond the facility boundaries. Any collected materials shall be applied to a field at agronomic fertilizer rates or be otherwise recycled with other fertilizer mixes.

(d) Handling or work areas where any dry fertilizer is stored, loaded, unloaded or handled shall be constructed of concrete, asphalt or other material that is sealed with a product approved by the secretary to maintain a permeability rate at least equivalent to that of concrete or asphalt.

(e) Conveyors and augers shall be equipped with dust control boots or socks.

(f) Roof and surface runoff water shall be diverted away from the fertilizer buildings or loading area by use of grading or other means of water diversion.

(g) Railside unloading areas shall have a large enough area, including the area between the rails, surfaced with concrete or asphalt to provide for sufficient clean-up of all spilled fertilizer materials. As an alternative, a portable device approved by the secretary may be used if the user demonstrates that all spilled materials can be controlled and contained by the device.

(h) All doors shall be locked when facility is not in use.

(i) Mixing and blending devices shall be covered with a suitable roof or otherwise be suitably designed and installed to prevent rain, sleet, snow or hail from coming into contact with the dry fertilizer.

(k) The name of the storage facility and the name and telephone number of individuals who may be contacted in case of emergency shall be posted on the storage facility using letters not less than two inches high.

(l) Buildings used to store dry fertilizer or fertilizer materials shall be marked with a general description of their contents.

(m) Handling or working areas where dry fertilizers are stored, loaded, unloaded or handled shall be cleaned daily after use.

K.A.R. 4-4-921. Record keeping.

(a) Records required to be maintained. Each of the following records shall be prepared by the operator of the storage facility and kept at the storage facility affected, or at the nearest local office from which the storage facility is administered.

(1) A record shall be completed on the day of discovery of all discharges of either 1,000 pounds or more of dry fertilizer outside the handling or working area or 100 gallons or more of liquid fertilizer into the secondary containment structure or area or any other portion of the storage facility including:

(A) the date and time of discharge, if known;

(B) the type of fluid or dry bulk fertilizer discharged;

(C) the volume of the discharged fertilizer;

(D) the cause of the discharge;

(E) the action taken, if any, to control or recover the discharged fertilizer; and

(F) the method of use or disposal of any recovered discharge. Updates of this record shall be made promptly showing the measures taken to control, recover, use or dispose of the discharge.

(2) An inventory record shall be kept of each fertilizer product.

(3) Any difference between the volume of each fertilizer product as shown in the inventory and the volume as measured which exceeds one per cent for a liquid fertilizer product or two per cent for a dry fertilizer product shall be reported to the secretary within three working days.

(4) A semi-annual inventory reconciliation shall be made at the end of June and December each year which shows the amount of fluid and dry bulk fertilizer which has been lost or unaccounted for from each storage container.

(5) Any difference between the volume of each fertilizer product as shown in the inventory and the volume as shown in the preceding inventory reconciliation which exceeds one per cent of the current inventory for each liquid fertilizer product or two per cent of the current inventory for each dry fertilizer product shall be reported to the secretary within three working days.

(6) A record shall be kept of the dates storage containers, appurtenances, operational area containment facilities, and secondary containment facilities were inspected and what maintenance or repairs, if any, were made.

(7) A record shall be kept listing the size and location of each abandoned storage container, if any.

(b) Period required for maintenance of records.

(1)Except as provided in subparagraph (b)(2), the records required by paragraph (a) shall be maintained for at least 5 years.

(2) Records required under subparagraph (a)(7) of this regulation shall be maintained as permanent records.

(3) Except for records required by paragraph (a), all other records required by K.A.R. 4-4-900 et seq. shall be maintained for at least 3 years.

(c) All records shall be available for inspection and copying by the secretary.

K.A.R. 4-4-922. Discharge response plan. (a) The operator of each storage facility shall prepare a written discharge response plan for the storage facility. This plan shall include:

(1) the name and telephone number of each person or agency which is to be contacted in the event of a discharge, including any persons responsible for the stored fertilizer;

(2) a complete copy of the storage container labeling required by K.A.R. 4-4-909 for each bulk fertilizer stored and the labeling required under K.S.A. 2-1201 et seq. for each fertilizer stored;

(3) identification, by location, of each storage container and the type of bulk fertilizer stored in it;

(4) the procedures to be used in controlling and recovering, or otherwise responding to a discharge for each type of bulk fertilizer stored at the facility; and

(5) the procedures for using or disposing of a recovered discharge.

(b) The operator shall keep the discharge response plan current at all times and shall update it at least annually.

(c) A copy of the discharge response plan shall be kept readily available at both the storage facility and the nearest local office from which the storage facility is administered.

(d) The operator of the storage facility shall provide a current copy of the plan to the local fire and police departments and the secretary.

(e) As an alternative, any environmental response plan or other plan which has been prepared to meet the requirements of another law or regulation, either state or federal, which contains the information required by this regulation may be accepted by the secretary.

K.A.R. 4-4-923. Existing storage tanks which have a capacity of 100,000 gallons or more. (a) Liquid fertilizer storage containers with a capacity of 100,000 gallons or more shall be located within an approved secondary containment area designed to allow the containment and recovery of any discharged fertilizer material.

(b) Unless otherwise approved pursuant to K.A.R. 4-4-956, the surface supporting the storage container shall be elevated above the surrounding surface of the containment area so that the lowest point of the storage container shall be at least six inches above the surrounding surface of the containment area to permit visual identification of any leaks which may develop in the floor of the storage container.

(c) This regulation shall apply to all storage containers with a capacity of 100,000 gallons or more which were placed in service on or before January 13, 1991.

K.A.R. 4-4-924. Storage tanks which have a capacity of 100,000 gallons or more; new construction. (a) This regulation shall apply to all storage containers with a capacity of 100,000 gallons or more which are constructed or placed in service on or after the effective date of this regulation.

(b) Liquid fertilizer storage containers with a capacity of 100,000 gallons or more shall be:

(1) located within an approved secondary containment area designed to allow the containment and recovery of any discharged fertilizer material; and

(2) placed on a surface which has been sealed with asphalt, concrete, attapulgite clay, sodium bentonite, or other material approved by the secretary.

(c) The bottom surface of the storage container shall be elevated above the surrounding surface of the containment area so that the lowest point of the storage container shall be at least six inches above the sealed surface to permit installation of a leak detection system.

(d) The leak detection system shall consist of:

(1) three or more perforated pipes or tile which shall:

(A) be placed on the sealed surface and below the storage container;

(B) be placed parallel to each other on not more than 10 foot centers; and

(C) extend to the outer edge of both sides of the tank; or

(2) any other leak detection system approved by the secretary.

(e) Unless otherwise approved pursuant to K.A.R. 4-4-956, each storage container shall be located in a secondary containment area which has been designed to permit both visual and sampling access to the leak detection system described in paragraph (d) of this regulation.

K.A.R. 4-4-931. Approved secondary containment of bulk fertilizer; general requirements. (a) Primary containment of liquid bulk fertilizer shall be located within a secondary containment area. Diked areas shall be constructed with a base, perimeter wall and sloped floor drain, except as provided by K.A.R. 4-4-934.

(b) The diked secondary containment area for fluid bulk fertilizer shall be physically separated and distinct from any secondary containment area for pesticides or other nonfertilizer materials; however adjoining secondary containment areas may share common walls.

(c) The diked area for secondary containment of storage facilities shall be able to contain, below the height of the dike, at least 110% of the capacity of the largest storage container plus the volume displaced by all other storage containers, fixtures, and materials located within the diked area.

(d) All pumps used for handling liquid fertilizer shall be located within the secondary containment structure or area.

(e) Except where used as a method of monitoring a secondary containment system, drainage within or underlying the area to be diked shall be eliminated.

(f) This regulation shall apply to:

(1) each storage facility in existence on the effective date of this regulation [January 14, 1991] which has a total storage capacity of 5,000 gallons or more;

(2) each storage facility in existence on the effective date of this regulation [January 14, 1991] which has a total storage capacity of 2,000 gallons or more and less than 5,000 gallons where 125 tons or more of liquid fertilizer is received into or transferred out of one or more storage containers located at the storage facility during any period of 365 consecutive days; and

(3) each storage facility which was not in existence on the effective date of this regulation [January 14, 1991] and which has a total storage capacity of 2,000 gallons or more.

K.A.R. 4-4-932. Secondary containment requirements; walls. (a) The walls of each secondary containment facility shall be constructed of earth, steel, concrete, solid masonry or any other material approved by the secretary, and be designed to withstand a full hydrostatic head of any discharged fluid and weight load of material used in construction.

(b) All cracks, joints, and seams shall be sealed to prevent leakage.

(c) Walls constructed of earth or other permeable materials shall be lined as provided in K.A.R. 4-4-933.

(d) Earthen walls shall have a horizontal-to-vertical slope of at least three to one, unless a steeper slope is consistent with good engineering practice, and shall be packed and protected from erosion. An exterior slope of 30 degrees or less shall be protected with grass or crushed stone. Slopes greater than 30 degrees and all interior slopes shall be protected with flat road stone or a similar crushed stone material.

(e) Walls shall not exceed six feet in height above interior grade unless provisions are made for normal access, necessary emergency access to tanks, valves and other equipment, and safe exit from the secondary containment facility.

(f) Walls constructed of concrete or solid masonry shall rest upon a floating base of concrete prepared as required in K.A.R. 4-4-933 or upon suitable concrete footings which extend below the average frost depth to provide structural integrity.

K.A.R. 4-4-933. Secondary containment requirements; lining. (a) General requirement. The base of a secondary containment facility, and any earthen walls of the facility shall be lined with asphalt, concrete, an approved synthetic liner, a clay soil liner or other product approved by the secretary, designed to limit permeability of the base and walls. Liners shall meet the requirements of this regulation.

(b) Asphalt or concrete liners. Asphalt or concrete liners shall be designed, according to good engineering practices, to withstand any foreseeable loading conditions, including a full hydrostatic head of discharged fluid and static loads of storage containers, including appurtenances, equipment, and contents. Cracks and seams shall be sealed to prevent leakage.

(c) Synthetic liners.

(1) All synthetic liners and installation plans shall be approved by the secretary. Until the manufacturer of the synthetic liner provides the secretary with a written confirmation of compatibility and a written estimate of the life of the liner, no approval shall be given.

(2) Synthetic liners shall not react either chemically or electrolytically with the materials being stored within the storage facility.

(3) Synthetic liners shall be installed according to manufacturer's specifications. All field constructed seams shall be tested and repaired, if necessary, in accordance with the manufacturer's recommendations.

(d) Clay soil liners. The surface soil, including the berm of an earthen dike and 10 feet beyond the berm, shall be sealed with a sealing agent such as sodium bentonite, attapulgite clay or a similar clay material approved by the secretary. The liner shall be constructed in accordance with reliable civil engineering recommendations to establish a barrier layer which will maintain a water level up to the working height of the containment structure for 72 hours, or a clay application which results in a downward water movement of not greater than one-half of an inch per 24 hour period. The floor of the containment area shall be protected with a layer of gravel, sand, earth or crushed stone at least six inches thick placed on top of the clay liner.

(e) Exemptions.

(1) A liner need not be installed directly under a storage container with a capacity of 100,000 gallons or more that has been constructed on site and put into use prior to the effective date of this regulation [January 14, 1991] if all of the following conditions are met:

(A) A second bottom made of steel or other material approved by the secretary is constructed for the storage container, placed over the original bottom, and topped with a layer of smooth, fine gravel or coarse sand at least six inches thick;

(B) the original bottom of the storage container is tested for leaks before the sand layer or second bottom, as described in (A) are installed; and

(C) the newly constructed bottom is tested for leaks before any fluid fertilizer is stored in the storage container;

(D) records of the tests described in (B) and (C) are kept on file at the storage facility, or at the nearest local office from which the storage facility is administered; and

(E) a method to readily detect leaks from the newly constructed bottom into the sand layer is in place.

(2) The secondary containment requirements in this regulation shall not apply to rail cars which are periodically removed from the storage facility.

K.A.R. 4-4-934. Use of elephant rings for secondary containment. (a) Individual storage containers may be contained within an elephant ring as an alternative to a diked containment area. The elephant ring shall serve as a second containing

wall in the event that the primary storage container develops a leak. The elephant ring shall be designed and installed to withstand a full hydrostatic head from the fluid stored in the enclosed primary storage container and all other stresses reasonably foreseeable from secondary containment of stored fertilizer.

(b) Both the primary storage container and the elephant ring shall be fabricated of materials compatible with each other and which do not react either chemically or electrolytically [with] the fertilizer being stored. Use of any combination of metals or other materials which contribute to chemical or electrolytic corrosion is prohibited.

(c) The height of the elephant ring wall shall not exceed six feet. The volume contained within the secondary storage walls up to the working height of the elephant ring shall be sufficient to contain a volume of 110% of the volume contained in the primary storage container plus the volume displaced by the footings of any equipment such as pumps, meter or other devices, placed within the secondary containment vessel.

(d) The elephant ring shall be free of leaks and structural defects. The base of the elephant ring shall be protected from corrosion, both from inside and outside, and underlain:

(1) by a concrete pad; or

(2) with eight inches of compacted gravel beneath four inches of compacted sand; or

(3) as recommended by the manufacturer of the elephant ring and approved by the secretary.

(e) All piping connections to the primary storage container shall be made over the wall of the elephant ring and adequately supported and braced. Pumps and other fixtures, if located within the elephant ring containment structure, shall be placed on an elevated platform.

(f) Accumulations of storm water and other material shall be pumped over the wall of the elephant ring by a sump pump within the secondary container, or by an exterior pump, and disposed of according to K.A.R. 4-4-935.

(g) Inspection and maintenance of the primary storage container and of the elephant ring shall be conducted as required by K.A.R. 4-4-920, and records of inspections and maintenance shall be made and maintained as required by K.A.R. 4-4-921.

K.A.R. 4-4-935. Drainage from contained areas within secondary containment. (a) Earthen or prefabricated containment area. An earthen or prefabricated containment area shall not have a relief outlet and valve. The base shall slope to a collecting spot where storm water can be discharged by pump over the berm for use in the blending process or for proper disposal in accordance with local requirements for disposal of storm water.

(b) Asphalt or concrete lined areas.

(1) An asphalt or concrete lined area shall have a recessed catch drain running through the center of the base or a sump as provided for in K.A.R. 4-4-936.

(2) The catch drain shall be at least six inches deep and 12 inches wide with an open grate cover.

(3) The asphalt or concrete slab located beneath the catch drain shall be at least the same thickness below and to the sides of the drain as the base is throughout the contained area and comply with K.A.R. 4-4-933.

(4) The asphalt or concrete base shall slope to the drain, and the drain shall slope to a discharge valve at the edge of the dike.

(5) The discharge valve shall be closed and secured except when used permitted by K.A.R. 4-4-905.

(6) The discharge valve shall drain to an underground concrete sump. A self-priming recovery pump shall be used to move all materials from the sump to alternate storage. The sump tank shall not be used as a permanent storage container. It shall be pumped periodically to remove any water, fertilizer material or both which it collects.

(7) Precipitation may be used for make-up water in fertilizer mixes or disposed of in accordance with local requirements if it is compatible with fertilizer materials being handled at the storage facility.

(c) Other areas.

(1) Earthen areas which are not lined with asphalt or concrete shall be lined with a synthetic liner approved by the secretary.

(2) Earthen areas lined with a synthetic liner shall be constructed as required in subsections (1) through (7) inclusive of section (b) of this regulation.

K.A.R. 4-4-936. Alternative to a recessed catch drain in containment areas. A sump may be located within the diked or secondary containment area as an alternative to the recessed catch drain if: (a) the sump construction conforms to the thickness specifications for the remainder of the containment base;

(b) the sump is drained over the wall of the containment structure by means of a pump;

(c) no valve is plumbed into the sump unless the sump has a permanent catchment system as described in K.A.R. 4-4-911; and

(d) materials removed from the sump are disposed of in a manner consistent with K.A.R. 4-4-935.

K.A.R. 4-4-937. Inspection and maintenance requirements; secondary containment. (a) Every secondary containment area, structure or device shall be inspected by the operator of the storage facility at least every six months and be maintained as necessary to assure compliance with these regulations.

(b) The operator shall make a written record of all inspections and maintenance on the day of the inspection or maintenance which shall be kept at the storage facility or at the nearest local office from which the storage facility is administered.

(c) All secondary containment areas, structures and devices shall be kept free of debris and foreign matter.

K.A.R. 4-4-950. Time frames for submission of initial diagram or plans. (a) Within one year after the effective date of this regulation, the owner of each existing or proposed storage facility shall submit a diagram or plans of the storage facility containing the following information:

(1) the location and size of each storage container;

(2) the drainage pattern of the storage facility;

(3) any source of drinking water within the facility, if any;

(4) any source of ground or surface water within 1320 feet of the storage facility, if any;

(5) any tank or other container used for the storage of petroleum products within the storage facility, if any;

(6) the location of each pump, pipe or other appurtenance used in the storage or transfer of fertilizer within the storage facility, if any;

(7) the location of each pad used for the loading of bulk fertilizer, if any; and

(8) the location of the storage facility for the dry fertilizer, if any;

(9) the standards and specifications for the construction of the storage facility for dry fertilizer, if any;

(10)the size and location of each proposed secondary containment structure to be located within the storage facility to comply with the requirements of K.A.R. 4-4-900 et seq.;

(11)the size and location of each proposed loading pad or area to be located within the storage facility to comply with the requirements of K.A.R. 4-4-900 et seq.; and

(12) any other information required by the secretary.

(b) The diagram shall be drawn to an appropriate scale which permits all required information to be shown and be easily readable without magnification.

K.A.R. 4-4-951. Requirements for plans and specifications. (a) Whenever a storage facility is constructed or extensively remodeled or an existing structure is converted to use as a storage facility, properly prepared plans and specifications for the construction, remodeling or conversion shall be submitted by the owner of the storage facility to the secretary for review and approval before construction, remodeling or conversion is begun.

(b) The plans and specifications shall include the proposed layout, mechanical plans, construction materials, work areas, and type of equipment to be fixed and facilities which will be remodeled, converted or constructed.

(c) The plans shall also contain the information required by K.A.R. 4-4-950.

(d) Any person, after submitting the plans required by this regulation, shall be given a time period not exceeding six months by the secretary in which to resubmit the plans with any corrections or additions required by the secretary.

(e) Upon approval of the plans by the secretary, the owner of the fertilizer storage facility shall be given a time period in which to complete any changes, corrections or additional construction at the storage facility as contained in the approved plans. The time period shall not exceed two years for the construction of loading pads and shall not exceed three years for the construction or installation of dikes or secondary containment facilities. Time periods shall run from the date the plans are approved.

(f) The secretary may grant additional time for construction or installation of storage containers, structures, dikes, or other equipment for good cause upon receipt of a written request. Such request shall state the reason for the additional time and the amount of additional time needed. The request may be granted if the request was made in good faith and the circumstances underlying the request were beyond the control of applicant.

K.A.R. 4-4-952. Time frames for construction; liquid fertilizer storage facilities. (a) Within three years after approval of construction plans by the secretary, the owner of each storage facility shall complete construction or installation of secondary containment facilities required by K.A.R. 4-4-900 et seq.

(b) Within two years after approval of construction plans by the secretary, the owner of each storage facility shall complete construction or installation of loading and unloading pads required by K.A.R. 4-4-900 et seq.

(c) The secretary may grant additional time for construction or installation of storage containers, structures, dikes, or other equipment for good cause upon receipt of a written request. Such request shall state the reason for the additional time and the amount of additional time needed. The request may be granted if the request was made in good faith and the circumstances underlying the request were beyond the control of applicant.

K.A.R. 4-4-953. Time frames for construction plans; dry fertilizer. (a) Within three years after approval of construction plans by the secretary, the owner of each storage facility shall complete construction or installation of secondary containment facilities required by K.A.R. 4-4-900 et seq.

(b) Within two years after approval of construction plans by the secretary, the owner of each storage facility shall complete construction or installation of loading and unloading pads required by K.A.R. 4-4-900 et seq.

(c) The secretary may grant additional time for construction or installation of storage containers, structures, dikes, or other equipment for good cause upon receipt of a written request. Such request shall state the reason for the additional time and the amount of additional time needed. The request may be granted if the request was made in good faith and the circumstances underlying the request were beyond the control of applicant.

K.A.R. 4-4-954. Fertilizer discharge report requirement. Any discharge of either 1000 pounds or more of dry fertilizer outside the handling or working area or 100 gallons or more of liquid fertilizer into the secondary containment structure or area or any other portion of the storage facility shall be reported to the secretary within 48 hours.

K.A.R. 4-4-956. Alternative designs for bulk fertilizer storage facility. (a) A bulk fertilizer storage facilityÆs alternative design that does not meet the requirements of K.A.R. 4-4-900 through K.A.R. 4-4-986 may be approved by the secretary. The applicant shall provide proof sufficient to the secretary that the alternative design meets or exceeds the applicable requirements of K.A.R. 4-4-900 through K.A.R. 4-4-986.

(b) Each application for approval of an alternative design shall include the following:

(1) The plans and specifications required by the applicable requirements of K.A.R. 4-4-900 through K.A.R. 4-4-986;

(2) data from the manufacturer or designer of the proposed bulk fertilizer storage facility documenting that the alternative design meets or exceeds the applicable requirements of K.A.R. 4-4-900 through K.A.R. 4-4-986;

(3) a description of the facilityÆs system for the detection of leaks or other malfunctions that meets the applicable requirements of K.A.R. 4-4-900 through K.A.R. 4-4-986;

(4) a statement by a licensed professional engineer certifying that the design provides protection to the environment that meets or exceeds the applicable requirements of K.A.R. 4-4-900 through K.A.R. 4-4-986;

(5) the construction timelines; and

(6) any other relevant information regarding the safe handling of bulk fertilizers required by the secretary.

(c) Upon completion of construction and before using the bulk fertilizer storage facility, the owner or operator of the bulk fertilizer storage facility shall submit to the secretary a detailed record of construction and a statement certifying that the bulk fertilizer storage facility was constructed according to the approved application.

K.A.R. 4-4-982. Marking of mobile storage containers. (a) Each owner or operator of any mobile storage container shall mark each mobile storage container with the following information on at least two opposing exterior surfaces of the container:

(1) The word “fertilizer”;

(2) the name and address of, and the emergency contact information for, the individual, corporation, association, or entity responsible for the mobile storage container; and

(3) the type of fertilizer in the mobile storage container.

(b) All information required by this regulation shall be marked in letters and numbers at least two inches high and in colors that sharply contrast with the color of the background.

K.A.R. 4-4-983. Mobile storage containers. (a) Each mobile storage container or combination of mobile storage containers that has a combined storage capacity of 2,000 gallons or more and is used to store liquid fertilizer at the same location for more than 60 consecutive days of storage shall meet the applicable requirements of K.A.R. 4-4-900 through K.A.R. 4-4-986.

(b) The 60-day period specified in subsection (a) of this regulation shall begin when the liquid fertilizer is delivered to an empty mobile storage container or when the mobile storage container is moved to a separate location more than 300 feet from the previous location and in accordance with K.A.R. 4-4-900(i) and K.A.R. 4-4-901.

(c) Each seller that delivers liquid fertilizers to any mobile storage container shall make and, for a minimum of three years, maintain records of the following for each delivery:

(1) The date of the delivery;

(2) the name of the person making the delivery;

(3) the number of gallons delivered;

(4) the legal description, to the nearest 10-acre quarter of the section, of the mobile storage container location at the time of delivery;

(5) a description of the fertilizer transported;

(6) the approximate quantity of fertilizer in the mobile storage container before delivery;

(7) the name of the owner or user of the mobile storage container; and

(8) the name and address of the buyer, seller, and transporting company, if different from the seller.

(d) Each seller shall provide written receipts containing the information specified in subsection (c) of this regulation to the owner or operator of the mobile storage tank, who shall retain these records for a minimum of three years.

(e) The records required by this regulation shall be made available to the secretary upon request.

K.A.R. 4-4-985. Application for new or modified bulk fertilizer storage facilities. (a) Before beginning construction, the owner or operator of each proposed new or modified bulk fertilizer storage facility shall submit to the secretary a complete application. The applicant shall provide proof sufficient to the secretary that the design will meet or exceed the applicable requirements contained in K.A.R. 4-4-900 through K.A.R. 4-4-986.

(b)(1) Each application shall be submitted on forms provided by the secretary. Each applicant shall complete and submit the application according to the directions on the forms. The applicant shall identify all confidential business information. Each application shall include the following:

(A) A location area map;

(B) a detailed plot plan of the facility;

(C) a water line backflow protection schematic diagram;

(D) detailed construction plans and specifications;

(E) a process flow diagram for the facility; and

(F) any additional relevant information regarding the safe handling of bulk fertilizers that the applicant or secretary deems necessary.

(2)(A) In addition to meeting the requirements listed in paragraph (b)(1) of this regulation, each application for a bladder tank shall also meet the requirements of K.A.R. 4-4-986.

(B) In addition to meeting the requirements listed in paragraph (b)(1) of this regulation, each application for an alternative design shall meet the requirements of K.A.R. 4-4-956.

(c) The application shall specify the physical location and the mailing address of the facility, if different from the address on the application.

(d) All construction plans and specifications for the facility submitted as part of the application shall be drawn to scale, be clearly and completely labeled, and be legible without magnification. The plans and specifications shall at a minimum contain the following:

(1) A plot plan or map of the property that shows all structures and the location of all wells, utility poles, and drainage systems on the site;

(2) the location of the facility relative to the floodplain;

(3) the approximate distance from, the direction to, and the identity of all lakes, streams, drainage ditches, and storm drains within 1,320 feet of the facility;

(4) the drainage pattern of the facility;

(5) the distance from and direction to all public and private water wells within the facility or within 1,320 feet of the facility;

(6) the location of all abandoned wells within 300 feet of the facility;

(7) the site soil characteristics;

(8) the depth to groundwater;

(9) the location of all utility service entrances and easements or rights-of-way within the facility;

(10) the construction plans for the secondary and operational area containment;

(11) the manufacturer's installation instructions, estimated life expectancy, and confirmation of compatibility with fertilizer material, if any synthetic liners, synthetic materials, or prefabricated basins are used in the containment structure; and

(12) the location of any tank or other container used for the storage of petroleum products within the storage facility, if any.

(e) Each set of construction plans and specifications for a bulk fertilizer secondary containment structure shall, at a minimum, contain the following:

(1) The size and location of each proposed secondary containment structure;

(2) the size and location of all bulk fertilizer storage containers or bins, pumps, piping, and appurtenances;

(3) the size and location of all operational areas and load pads;

(4) the drainage pattern and sump location; and

(5) the calculated capacity of each containment structure in gallons or cubic feet.

(f) Elevation plans or maps shall be included with the application and shall show the location of all bulk fertilizer storage tanks and their horizontal, raised, or vertical positioning within the secondary containment and a tank schedule that provides all of the following information for each tank:

(1) The construction material;

(2) the capacity;

(3) the diameter or dimensions;

(4) the height; and

(5) the date of installation.

(g) Each construction or modification project shall conform with the plans and specifications identified in the approved application and required by this regulation.

(h) Upon completion of construction or modification and before use of the newly constructed or modified portion of the facility, the owner or operator shall provide the secretary with certification that all construction or modification was completed in accordance with this regulation.

(i) Sources outside of the Kansas department of agriculture may be utilized by the secretary for assistance in evaluating any alternative design application submitted.

K.A.R. 4-4-986. Liquid bulk fertilizer bladder tank requirements. (a) Each liquid bulk fertilizer bladder tank design shall be required to be approved by the secretary before use. Each applicant shall provide the information specified in this regulation to the secretary establishing that the bladder tank design meets or exceeds the applicable requirements of K.A.R. 4-4-900 through K.A.R. 4-4-986.

(b) Each application shall be submitted on one or more forms provided by the secretary. Each applicant shall complete these forms and submit the application in compliance with the directions on the forms. The applicant shall designate all trade secrets that the applicant wishes to be considered as confidential.

(c) Each application submitted for approval shall include the plans and specifications, which shall be certified and stamped by a registered professional engineer. These plans and specifications shall include the following:

(1) All information required by K.A.R. 4-4-985;

(2) the results of a soil compaction study and an evaluation of these findings showing that the underlying soil and support pad can support the weight of the filled tank;

(3) construction details of the support pad, including details of the external leak detection;

(4) the wind loading and buoyancy calculations for the tank when empty; and

(5) construction and assembly details of the tank and liner, which shall include the following:

(A) The liner manufacturer's detailed information, including liner thickness, composition, chemical compatibility, and life expectancy;

(B) a description of the protective barriers between the liner and the tank, including cross-sections of each wall and the floor;

(C) detailed information about liner suspension;

(D) detailed information about roof support;

(E) detailed information about the method to be used to remove condensate, overage, and liner leakage, if any;

(F) detailed information about all external openings through the tank, including any leak detection ports, valves, manways, and other inspection ports;

(G) detailed information about all openings through the tank liner;

(H) detailed information about the liquid-level gauging device, including overage prevention;

(I) detailed information about the internal leak detection system;

(J) the method of securing the tank and appurtenances to prevent any discharge of stored fertilizer;

(K) each manufacturer's recommendations for inspection and maintenance of the tank, liner, and appurtenances and a statement specifying how these recommendations will be implemented; and

(L) any other relevant information regarding the safe handling of bulk fertilizer required by the secretary.

(d) All external appurtenances, including leak detection ports and valves, shall meet the following requirements:

(1) Be encased or enclosed to contain any leaks;

(2) have a leak detection method; and

(3) have a method to secure the enclosure from unauthorized access.

(e) All pipes outside the tank shall be double-walled from the storage tank to the loading pad and shall have a leak detection method.

(f) All tanks and appurtenances shall be protected from damage due to vehicle traffic.

(g) Each applicant shall verify the manufacturer's certification that the external tank has been built to the applicable provisions of the American petroleum institute's API standard 650, published November 1998 and including the January 2000 addenda, November 2001 addenda, and all appendices, which is hereby adopted by reference.

(h) Upon completion of construction and before use, the owner or operator of the facility shall submit to the secretary a detailed record of construction and a statement certifying that the facility was constructed according to the approved application.

(i) Each bladder tank shall be inspected and maintained according to the approved plan.

KANSAS ADMINISTRATIVE REGULATIONS
Agency 4 – Kansas Department of Agriculture
Article 10. – ANHYDROUS AMMONIA

K.A.R. 4-10-1. Definitions. (a) "Tank" or "container" means any vessel designed and constructed for the storage and handling of anhydrous ammonia.

(b) "Gas" means anhydrous ammonia in either the gaseous or liquefied state.

(c) "Designed pressure" means maximum allowable working pressure.

(d) "Appurtenances" means all devices that are used in connection with a container including safety devices, liquid level gauging devices, valves, pressure gauges, fittings and metering or dispensing devices.

(e) "System" means an assembly of equipment consisting essentially of the container or containers, appurtenances, pumps, compressors, and interconnecting piping.

(f) "Capacity" means the total volume of a container measured in standard U.S. gallons of 231 cubic inches, unless otherwise specified.

(g) "Filling density" means the percent ratio of the weight of gas in a container to the weight of water the container will hold at 60^0 F.

(h) "F." means Fahrenheit.

(i) "Code" means parts UG-1 through UG-136 inclusive, entitled "general requirements for all methods of construction and all materials" and parts UF-1 through UF-125, entitled "requirements for pressure vessels fabricated by forging", both as published in section VIII, division 1, of the ASME boiler and pressure vessel code, July 1, 1992 edition, as the context requires.

(j) "ASME schedule 80" or "ASME schedule 40" means pipe specifications contained in the "specification for pipe, steel, black and hot dipped, zinc-coated welded and seamless" and the accompanying appendices, as published in section II, of the ASME boiler and pressure vessel code, July 1, 1992 edition.

(k) "PSIG" means pounds per square inch gauge pressure.

(l) "ASME" means American society of mechanical engineers.

(m) "Implement of husbandry" means a farm wagon-type vehicle or application unit which has an anhydrous ammonia container mounted on it and which is used for transporting anhydrous ammonia from a source of supply to farms or fields, or from one farm or field to another.

(n) "Public assembly area" means any building, structure, or area used by a gathering of persons for civic, political, travel, religious, recreational or education purposes, or for the involuntary detention of persons.

(o) "Non-code welding" means welding which does not comply with parts UW-1 through UW-65, entitled "requirements pertaining to methods of fabrication of pressure vessels", as published in section VIII, division I, of the ASME boiler and pressure vessel code, July 1, 1992 edition.

(p) "Permanent storage container" means tank or container having a volume of not less than 3,000 water gallons which is used in the sale or dispensing of anhydrous ammonia. The permanent storage container may be mounted on either piers or skids.

(q) "Permanent storage installation" means any assembly of equipment consisting of appurtenances, pumps, compressors, interconnecting pipes, not at least one permanent storage container.

K.A.R. 4-10-2a. Basic rules for approval of equipment and systems. (a) Before installing or relocating a stationary anhydrous ammonia container or permanent unloading facility, the owner shall submit to the secretary a detailed diagram showing;

(1) the location of the container or facility in relation to boundary lines of the property on which the container or facility is to be located;

(2) any source of drinking water within 50 feet of the container;

(3) any facility storing petroleum products within 50 feet of the container; and

(4) each public assembly area, hospital, nursing home or home for the aged within 1,000 feet of the stationary container or permanent unloading facility.

(b) No person shall install or use any system for supplying anhydrous ammonia unless the system is safe and adequate, and unless the tank, system and appurtenances comply with K.A.R. 4-10-1 *et seq*.

(c) No person shall fill a container with anhydrous ammonia unless the container bears a manufacturer's name plate showing that it is a code container and complies with K.A.R. 4-10-1 *et seq*.

(d) No person shall transfer or deliver any anhydrous ammonia into a container having defects which are plainly apparent.

(e) No person shall deliver or transfer anhydrous ammonia into any container without the consent of the owner of the container.

K.A.R. 4-10-2b. Basic rules for construction and testing of containers, including skid systems, other than refrigerated storage tanks. (a) Each container used with a system that is subject to K.A.R. 4-10-4, 4-10-5, 4-10-6 or 4-10-7 shall be constructed and tested in accordance with the code.

(b) Each container whose diameter exceeds 36 inches or whose capacity exceeds 250 gallons shall:

(1) be stress-relieved after fabrication in accordance with the code;

(2) use cold-formed heads that have been stress-relieved; or

(3) use hot-formed heads.

(c) Each container, except refrigerated storage tanks with a design pressure of less than 15 psig, constructed as required by K.A.R. 4-10-1 *et seq*., shall be inspected by a person having a current certificate of competency from the national board of boiler and pressure vessel inspectors.

(d) The provisions of K.A.R. 4-10-2b (a) shall not prohibit the continued use of containers constructed and maintained in accordance with any prior edition of the code. The burden of proof of compliance shall be on the person invoking this paragraph.

(e) A pressure test of storage tanks and tanks mounted on implements of husbandry shall be conducted after any accident involving structural damage to the pressure vessel.

K.A.R. 4-10-2c. Basic rules for markings on containers and systems. (a) Each container or system that is subject to K.A.R. 4-10-4, 4-10-5, 4-10-6 or 4-10-7 shall be marked:

(1) With a statement that the container complies with the code under which the container was constructed and any other marks required by that code;

(2) With a notation as to whether the system is designed for underground or aboveground installation, or both;

(3) With the name and address of the supplier of the system or the trade name of the system, and date of manufacture;

(4) With the water capacity of the container in pounds or U.S. standard gallons;

(5) With the working pressure, in pounds per square inch, for which the container is designed;

(6) With the wall thickness of the shell and heads;

(7)With a notation of the maximum level to which the container may be filled with liquid at liquid temperatures between 20^0 F. and 100^0 F. Such a notation shall not be required for containers provided with fixed, maximum-level indicators, or for containers which are filled by weighing. Markings shall be in increments of not more than 20^0 F.; and

(8)With outside surface area in square feet. Each required mark shall be on the container itself or on a nameplate permanently affixed thereto.

(b) All main operating valves on permanently installed containers having a capacity of over 3,000 water gallons shall be identified to show whether the valve is in liquid or vapor service. The method of identification may be by legend or color code and shall be placed within 12 inches of the valve by means of a stencil, tag, or decal.

K.A.R. 4-10-2d. Basic rules for location of permanent storage containers. (a) Permanent storage containers shall be located outside of buildings other than those buildings specifically constructed for this purpose. Permanent storage containers shall be located:

(1) at a distance not less than 50 feet from either the line of any property upon which a building may be erected or from a source of drinking water, or both;

(2) at a distance not less than 1,000 feet from any public assembly area; and

(3) at a distance not less than 1,000 feet from any hospital, nursing home, or home for the aged. The plant site shall be large enough to permit an easy flow of traffic in and out of the plant, storage of implements of husbandry and adequate access for emergency personnel.

(b) Stationary containers used for the storage of anhydrous ammonia shall be located not less than 50 feet from containers of petroleum products.

(c) From and after May 1, 1988, each new permanent storage container or unloading facility shall be located outside of municipalities or other densely populated areas unless the location has been approved in writing by the appropriate local governing body. Each existing permanent storage container or unloading facility located in a municipality or densely populated area shall not be relocated within the municipality or densely populated area without first obtaining written approval from the appropriate local governing body.

K.A.R. 4-10-2e. Basic rules for container valves and appurtenances. (a) All shut-off valves and appurtenances shall be suitable for use with anhydrous ammonia and designed for not less than the maximum pressure to which they will be subjected. Valves which may be subjected to container pressures shall have a rated working pressure of at least 250 psig, except valves for refrigerated storage tanks shall have a rated working pressure at least equal to the maximum pressure to which they may be subjected.

(b) All connections to containers, except safety relief connections and gauging devices, shall have manually operated shut-off valves located as close to the container as practicable.

(c) Liquid level gauging devices which are so constructed that outward flow of the container's content does not exceed that passed by a No. 54 drill size opening shall not be required to be equipped with excess flow valves.

(d) Openings from the container or through fittings attached directly on the container to which pressure gauge connection is made need not be equipped with an excess flow valve if such openings are protected by an opening not larger than a No. 54 drill size opening.

(e) All excess flow valves shall be plainly and permanently marked with the name or trade-mark of the manufacturer, the catalog number, and the rated capacity.

(f) Excess flow valves required by these regulations shall close automatically at the rated flows of vapor or liquid as specified by the manufacturer. The connections and line, including valves and fittings, protected by one or more excess flow valves shall have a greater capacity than the rated flow of these excess flow valves so that these valves will close in case of failure at any point in the line or fittings.

(g) Excess flow and back pressure check valves shall be located inside the container or at an outside point where the line enters the container. In the latter case, installation shall be made in such a manner that any undue strain beyond the excess flow or back pressure check valve will not cause breakage between the container and such valve. An excess flow valve shall be installed in any pipe with a diameter which is smaller than the pipe to which it is attached on the end leading from the container. A backflow check valve or a properly sized excess flow valve shall be located at the point where attachment is made to fill the container.

(h) Each excess flow valve shall be designed with a by-pass, not to exceed a No. 60 drill size opening, to allow equalization of pressures.

K.A.R. 4-10-2f. Basic rules for piping, tubing, and fittings. (a) All fittings subjected to container pressure shall be made of materials specified for use with anhydrous ammonia and shall be designed for a minimum working pressure of 250 psig. Fittings for refrigerated storage tanks shall have a rated working pressure at least equal to the maximum pressure to which they may be subjected. No cast iron bushings, plugs, or pipe fittings shall be allowed in the lines or connections.

(b) Galvanized pipe shall not be used. Screwed joints may be used only with extra heavy (ASME schedule 80) pipe. Black steel or iron pipe of at least 800 psig minimum bursting pressure (ASME schedule 40) may be used provided pipe joints are welded or joined by means of welding type flanges. Pipe joint compounds shall be resistant to ammonia.

(c) All pipe lines shall be installed as nearly as possible in a straight line with a minimum amount of pipe, and shall not be restricted by an excessive number of elbows and bends. Where nipples are used, they shall be of extra-heavy, seamless type.

(d) Rigid connections or all-metal flexible connections with a bursting pressure of 1,000 psig shall be used for permanent installations. Other types of flexible connections may be used for temporary installations.

(e) Provisions shall be made for expansion, contraction, jarring, vibration and for settling. Short sections of flexible connections may be used for this purpose.

(f) Adequate provisions shall be made to protect all exposed piping from physical damage that might result from moving machinery, the presence of automobiles or trucks, or any other undue strain that may be placed upon the piping.

(g) After assembly, all piping and tubing shall be tested at a pressure not less than the normal operating pressure of the system to establish that no leaks exist.

K.A.R. 4-10-2g. General rules for hose specifications and assemblies. (a) Each hose and each hose connection shall be fabricated of materials that are resistant to the action of anhydrous ammonia.

(b) Each hose subject to container pressure shall be designed for a minimum working pressure of 350 psig and a minimum burst pressure of 1750 psig. Hose assemblies shall be capable of withstanding a test pressure of 500 psig.

(c) Hose and hose connections located on the low pressure side of flow control or pressure-reducing valves or devices discharging to atmospheric pressure shall be designed for a minimum working pressure of 60 psig. All connections shall be designed, constructed and installed so that there will be no leakage when connected.

(d) If a liquid transfer hose is not drained of liquid upon completion of a transfer operation, the hose shall be equipped with an approved shut-off valve at the discharge end. Provisions shall be made to prevent excessive hydrostatic pressure in the hose.

(e) On all hoses that are at least ½ inch in diameter and which are used in ammonia service and subject to container pressure, the following information shall be etched, cast or impressed at five foot intervals: "Anhydrous Ammonia, XXX psig (Maximum Working Pressure), manufacturer's name or trademark, year of manufacture."

(f) Except as specified below, each hose shall be replaced prior to or upon the expiration of the manufacturer's recommended service life for that hose. Service life commences on the date the hose is installed. Ammonia hoses made with the following reinforcement materials shall be replaced as follows:

(1) rayon-within two years from the date of installation;
(2) nylon-within four years from the date of installation;
(3) Kevlar-within four years from the date of installation;
(4) stainless steel-within six years from the date of installation.

(g) Hoses shall be removed from service if a visual examination reveals:

(1) cuts exposing reinforcing fabric;
(2) soft spots or bulges in the hose;
(3) a blistering or loose outer covering;
(4) any unusual abuse including kinking or flattening by a vehicle;
(5) indications that the hose may have been stretched; or
(6) slippage at any coupling.

(h) Hoses shall have either ASME schedule 80 factory-installed ends or reusable ASME schedule 80 hose ends designed for use with anhydrous ammonia.

K.A.R. 4-10-2h. General rules for safety devices. (a) Each container used with systems subject to K.A.R. 4-10-4, 4-10-5, 4-10-6, or 4-10-7 shall be provided with one or more safety relief valves of a spring-loaded type or a valve of an equivalent type.

(b) Container safety relief valves shall be set to start-to-discharge at a pressure not less than 95 percent of and not more than 100 percent of the design pressure of the container.

(c) Safety relief valves used on containers or systems shall be constructed to completely discharge before the pressure exceeds 120 percent of the design pressure of the container.

(d) Safety relief valves shall be arranged to minimize the possibility of tampering. If the pressure setting or adjustment is external, the relief valves shall be provided with a satisfactory means for sealing adjustment.

(e) Shut-off valves shall not be installed between the safety relief valves and the container, except that a shut-off valve may be used when the valve is arranged in a manner that affords full required capacity flow through the relief valve.

(f) The discharge from safety relief devices shall not terminate in or beneath any building or other confined area.

(g) All safety relief valve discharge openings shall have suitable raincaps that will allow free discharge of the vapor and prevent the entrance of water. The flow capacity of the safety relief valve shall not be restricted by any connection to it on either the upstream or downstream side.

K.A.R. 4-10-2i. General rules regarding filling densities and transfer of liquids. (a) Filling densities.

(1) Anhydrous ammonia containers shall not be filled to more than 85 percent of their capacity by volume.

(2) All containers filled according to liquid level by any gauging method, other than a fixed-length dip tube gauge, shall have a thermometer well so that the internal liquid temperature can be easily determined and the amount of liquid and vapor in the container can be easily corrected to a 60^{o} F. basis.

(b) Transfer of liquids.

(1)At least one attendant shall supervise the transfer of liquids from the time the connections are first made until they are finally disconnected.

(2) Containers shall be gauged and charged only in the open air or in buildings especially provided for that purpose.

(3) Pumps used for transferring anhydrous ammonia shall be recommended and labeled for anhydrous ammonia service by the manufacturer.

(A) Liquid pumps shall be designed for 250 psig working pressure.

(B)Positive displacement pumps shall have installed at the discharge port, a constant differential relief valve that discharges through a line of sufficient size to carry the full capacity of the pump at the relief valve setting. The relief valves shall be installed and set according to the pump manufacturer's recommendation.

(C) A fully operational pressure gauge graduated from 0 to 400 psi shall be installed on the discharge side of the pump and before the relief valve line.

(D) Shut-off valves shall be installed within three feet of the inlet of the pump and within two feet of the discharge.

(4) Compressors used for transferring or refrigerating anhydrous ammonia shall be recommended and labeled for anhydrous ammonia service by the manufacturer.

(A) Compressors may be of the reciprocating or rotary type and shall be designed for 250 psig working pressure.

(B) Plant piping shall contain shut-off valves which shall be located as close as is practical to the compressor connections.

(C) A relief valve large enough to discharge the full capacity of the compressor shall be connected to the discharge before any shut-off valve. The discharging pressure of this valve shall not exceed 300 psig.

(D) Compressors shall have fully operational pressure gauges graduated from 0-400 psi at suction and discharge.

(E) Adequate means to minimize the entry of liquid into the compressor, such as a drainable liquid trap, shall be provided on the compressor suction.

(5)In addition to the excess flow valves in the liquid and vapor connections of the storage container and the tank car or truck, an excess flow valve or backflow check valve shall be installed in the piping connecting the storage container with the tank car or truck, close to the point where the piping and hose are joined.

(6) Flammable gases or gases which will react with anhydrous ammonia, such as air, shall not be used to unload tank cars or transport trucks.

K.A.R. 4-10-2j. General requirements for tank car and transport truck unloading points and operations. (a) The track of tank car siding shall be substantially level.

(b) A sign reading "Stop--Tank Car Connected" shall be displayed at the active end or ends of the siding while the tank car is connected for unloading.

(c) While cars are on a side track for unloading, the wheels at both ends shall be blocked on the rails.

(d) Except as specified in K.A.R. 4-10-5a, tank cars and transport trucks shall be unloaded only through a permanently installed loading point and into a permanently located bulk storage tank. No anhydrous ammonia shall be unloaded directly from a railroad tank car into a transport truck or other portable container.

(e) Loading and unloading systems shall be protected by suitable devices to prevent emptying of the storage container or loading or unloading the container if the hose is severed. Backflow check valves or properly sized excess flow valves shall be installed where necessary to provide this protection. If these valves are not practical, remotely operated shut-off valves may be installed.

(f) Tank cars and transport trucks shall be unloaded into a permanent, approved unloading site that discharges into a portable acid-fertilizer conversion unit producing liquid fertilizer if both of the following conditions are met:

(1) The conversion unit is approved for use by the Kansas department of health and environment pursuant to K.S.A. 65-3001 *et seq*., and amendments thereto.

(2) Approved air-operated valves that normally are closed are used in the line connecting the source of anhydrous ammonia and the conversion unit.

K.A.R. 4-10-2k. General rules--miscellaneous provisions. (a) Liquid level gauging device.

(1) Each container, except containers filled by weight, shall be equipped with a liquid level gauging device of approved design.

(2) Each gauging device shall be arranged so that the maximum liquid level to which the container may be filled is readily determinable.

(3) Each gauging device that requires bleeding of the product to the atmosphere shall be so designed that the bleed valve maximum opening is not larger than a No. 54 drill size, unless provided with an excess flow valve. This requirement shall not apply to containers subject to K.A.R. 4-10-7.

(4) Gauging devices shall have a design pressure at least equal to the design pressure of the storage tank on which they are used.

(5)Each liquid level gauge shall be so designed that the maximum volume of the container filled by liquid shall not exceed 85 percent of its water capacity. The coupling into which the fixed liquid level gauge is threaded shall be placed at the 85 percent level of the container. If located elsewhere, the dip tube of this gauge shall be installed in such a manner that it cannot be readily removed, such as by the use of a nipple attached directly to the coupling or to a multiheaded valve.

(6)Gauge glasses of the columnar type shall be restricted to bulk storage installations. Gauge glasses shall be equipped with valves having metallic handwheels, with excess flow valves, and with extra heavy glass adequately protected with a metal housing applied by the gauge manufacturer. The Gauge glasses shall be shielded against the direct rays of the sun.

(b) Painting. The reflective surfaces of each above ground container shall be maintained in good condition. Surfaces that require paint shall be painted with white or any other light-reflecting color.

(c) Reports. Each accident involving the storage, transportation or application of anhydrous ammonia shall be reported by the owner or operator of the anhydrous ammonia storage or equipment involved to the secretary or the secretary's authorized representative so that an investigation of the accident may be made. Each required report shall be made by telephone within 72 hours after the accident followed by a written report that must be mailed within five working days after the accident.

(d) Railroad tank cars. Railroad tank cars shall not be used for the storage of anhydrous ammonia unless they are retested and meet the requirements of these regulations.

(e) Welding on containers. Non-code welding, if necessary, shall be made only on saddles or brackets originally welded to the container by the manufacturer. Non-code welding directly to the container or any parts subject to pressure shall not be permitted.

(f) Use of containers for other service. Anhydrous ammonia containers of 3,000-gallon water capacity or under shall not be used for any other commodity.

(g) This regulation shall become effective on January 1, 1989.

K.A.R. 4-10-4. Stationary, pier, skid-mounted, or underground non-refrigerated storage installations.

Each stationary, pier, skid-mounted, or underground non-refrigerated storage installation shall meet the following requirements.

(a) Design pressure of containers. Each container shall be constructed in accordance with K.A.R. 4-10-2b and shall have a minimum design pressure of 250 psig.

(b) Installation of storage containers.

(1) Each container installed aboveground shall be provided with substantial reinforced concrete footings and foundations, or structural steel supports mounted on reinforced concrete foundations. The reinforced concrete foundations or footings shall extend below the established frost line and shall be constructed with sufficient width and thickness to support adequately the total weight of the containers and their contents. If the tank is equipped with bottom withdrawal, the tank's foundation shall maintain the lowest point of the tank at not less than 18 inches above ground level. If the load-bearing surface of a skid assembly has sufficient area to properly support the skid-mounted tank, reinforced concrete footings or foundations are not required.

(2) Each horizontal aboveground container shall be mounted on its foundation in such a manner as to permit expansion and contraction. Each container shall be adequately supported so as to prevent the concentration of excessive loads on the supporting portion of the shell. Suitable corrosion prevention measures shall be utilized on any portion of the container which is in contact with either the foundation or saddles.

(3) Secure anchorage or adequate pier height shall be provided to prevent container flotation during high flood water.

(c) Container valves and appurtenances.

(1) All containers shall be equipped with a fixed, liquid level gauge.

(2) Each container shall be equipped with a fully operational pressure indicating gauge with a dial graduated from 0-400 psig.

(3) Each filling connection shall be fitted with an approved combination back pressure check valve and excess flow valve.

(4) Each container shall be equipped with an approved vapor return valve. Except for safety relief valves and those connections specifically exempted by K.A.R. 4-10-2e(b) and K.A.R. 4-10-2e(d), each vapor or liquid connection shall be equipped with either approved excess flow valves or with approved quick-closing internal valves which shall remain closed except during periods of operation.

(d) Safety devices. Each container shall be provided with one or more spring-loaded or equivalent safety relief valves. Each container shall also comply with the following requirements:

(1) The discharge from each safety relief valve shall be directed upward and away from the container and shall flow in an unobstructed manner into the open air from a height of at least seven feet above the working area. The secretary or an authorized representative of the secretary may grant a variance where venting of safety relief valves as previously described is hazardous, economically unfeasible, structurally unsound or for other just cause.

(2) Vent pipes shall not be restricted or smaller in size than the relief valve outlet connection. All relief valve discharges shall have suitable rain caps. Suitable provision shall be made to drain any accumulated condensate.

(3) Vent pipes from two or more safety relief devices located on the same container, or similar lines from two or more different containers, may be connected and channeled into a common header, if the cross-sectional area of the header is at least equal to the sum of the cross-sectional areas of each of the individual vent pipes.

(e) Marking of containers.

(1) Each tank or group of tanks shall be marked on at least two sides either with the words "caution ammonia" or "anhydrous ammonia" in sharply contrasting colors with letters not less than six inches high.

(2) From and after May 1, 1989, the name of the storage facility and the name and telephone number of individuals to be contacted in case of an emergency shall be posted on the storage facility using letters not less than two inches high.

(f) Capacity of containers. Individual storage container capacity shall be limited only by good engineering practice.

(g) Protection of tank appurtenances.

(1) All container appurtenances shall be protected from tampering and mechanical damage and shall also be protected during transportation of containers. Manually controlled valves which, if open, would allow gas to discharge into the atmosphere, shall be kept locked during non-business hours.

(2) Storage containers shall be grounded.

(3) All areas occupied by storage installations shall be kept free of dry grass and other readily ignitable materials.

(4) Containers and appurtenances shall be protected from damage by vehicles.

(h) Testing of damaged containers. Damaged containers shall be tested by a person certified as required by K.A.R. 4-10-2b(c).

(i) Safety. All stationary plants shall have readily available the following equipment for emergency and rescue purposes:

(1) An approved gas mask with current ammonia canisters having intact seals which covers the entire face;

(2) One pair of rubber or suitable plastic protective gloves;

(3) One pair of rubber or suitable plastic protective boots;

(4) One rubber or suitable plastic protective slicker or rubber or suitable plastic protective rain suit, or both;

(5) An easily accessible shower or a container of clean water of sufficient size to immerse or cleanse an individual; and

(6) A flexible-fitting, splash-proof pair of goggles.

(j) Electrical equipment.

(1) The conduit system and electrical equipment for use at ammonia storage installations may be general purpose, dust-tight, or weather-resistant as appropriate.

(2) Electrical systems shall be installed and grounded in a manner approved by state or local ordinance.

(3) Electrical switches for each pump shall be installed at a remote distance from the pump.

(k) Venting Procedure.

(1) Anhydrous ammonia shall be vented into an adequate portable supply of water. Any aqueous ammonia solution resulting from the venting process shall be disposed of safely and properly.

(2) Anhydrous ammonia shall not be vented into the air. Each transport truck unloading point at an anhydrous ammonia facility shall have a valve for venting purposes installed in the piping at or near the point where the piping and the hose from the transport truck are connected. In the alternative, anhydrous ammonia from any transport truck hose shall be vented into an adequate portable supply of water supplied by the anhydrous ammonia facility. For this purpose, an adequate supply of water means five gallons of water for each gallon of liquid ammonia or fraction thereof which could be contained in the hose. Any aqueous ammonia solution resulting from the venting process shall be disposed of properly.

K.A.R. 4-10-5. Tank trucks, semitrailers and trailers for transportation of anhydrous ammonia. Each tank truck, semitrailer and trailer, except implements of husbandry, used for transportation of anhydrous ammonia shall meet the following requirements: (a) Design pressure of containers.

(1) Each container shall be constructed in accordance with K.A.R. 4-10-2(b) and shall have a minimum design pressure of 250 psig.

(2) The shell or head thickness of each container shall not be less than 3/16 of an inch.

(3) Baffles shall not be required for any cargo tank that is designed so that the container is loaded to capacity and discharged at one unloading point. All other containers having a capacity in excess of 500 gallons shall be equipped with suitable, semirigid baffle plates.

(4) Except for safety relief valves, liquid level gauging devices, and pressure gauges, all container openings shall be labeled to designate whether they communicate with liquid or vapor space. Labels may be located on valves.

(b) Mounting containers on truck.

(1) The container shall be attached to the cradle, frame, or chassis of a vehicle in a manner designed to withstand, in any direction, that amount of static loading equal to twice the weight of the container when filled and its attachments. The safety factor used shall be not less than four and shall be based on the ultimate strength of the material to be used.

(2) "Hold-down" devices, when used, shall anchor the container to the cradle, frame, or chassis in a suitable and safe manner that will not introduce an undue concentration of stresses.

(3) If any vehicle is designed and constructed so that cargo tanks constitute, in whole or in part, the stress member used in lieu of a frame, the cargo tanks shall be designed to withstand the stresses thereby imposed.

(4) All connections, including any hose installed in the bottom of a container, shall not be lower than the lowest horizontal edge of the trailer axle.

(5) While in transit, both ends of each transfer hose shall be secured.

(6) If the cradle and the container are not welded together, a suitable material shall be used between them to eliminate metal-to-metal friction.

(c) Container valves and appurtenances.

(1) Each container shall be equipped with a fixed liquid level gauge.

(2) Each container shall be equipped with a fully operational pressure-indicating gauge that has a dial graduated from 0-400 psi.

(3) Nonrecessed container fittings and appurtenances shall be protected against damage.

(4) Filling connections shall be provided with approved automatic valves to prevent backflow whenever the filling connection is broken.

(5) Except for safety relief valves and those connections specifically exempted by K.A.R. 4-10-2e(b) and K.A.R. 4-10-2e(d), all connections to containers shall be provided with approved excess-flow valves.

(6) All containers shall be equipped with an approved vapor return valve.

(d) Safety devices.

(1) The discharge from each safety relief valve shall be directed upward and away from the container and shall flow in an unobstructed manner into the atmosphere. Loosely fitting rain caps shall be used.

(2) Each unloading line shall be provided with an excess-flow valve at the point where the hose leaves the truck.

(e) Marking of containers. Each side and the rear of every container shall be conspicuously and legibly marked on a background of sharply contrasting color with the words "anhydrous ammonia" in letters at least four inches high and shall be placarded in compliance with applicable D.O.T. regulations.

(f) Piping, tubing, and fittings.

(1) All piping, tubing, and metering or dispensing devices shall be securely mounted and shall be protected against damage.

(2) Threaded pipe shall be extra heavy and comply with ASME schedule 80. Standard weight pipe that complies with ASME schedule 40 may be used if the joints are welded.

(g) Electrical equipment and lighting. Tank trucks, tank trailers, and tank semitrailer shall not be equipped with any artificial light other than electric light. Electric lighting circuits shall have suitable overcurrent protection.

(h) Trailers and semitrailers.

(1) Each trailer or semitrailer shall be equipped with a reliable system of brakes that comply with D.O.T regulations.

(2) Each trailer or semitrailer shall have lights that comply with D.O.T. regulations.

(i) Safety equipment. All tank trucks, trailers, and semitrailer shall be equipped with the following:

(1) An approved gas mask that has current ammonia canisters having intact seals and that covers the entire face;

(2) one pair of rubber or suitable plastic protective gloves;

(3) one pair of rubber or suitable plastic protective boots;

(4) one rubber or suitable plastic protective slicker, or rubber or suitable plastic protective rain suit, or both;
(5) a pair of flexible-fitting, splash-proof goggles; and
(6) a container of not less than five gallons of clean water.
(j) Transfer of liquids.
(1) Each container shall be loaded by any of the following:
(A) Weight;
(B) a suitable liquid level gauging device; or
(C) a suitable meter.
(2) Pumps or compressors designed and installed in accordance with K.A.R. 4-10-2(j) and properly protected against physical damage may be mounted on ammonia tank trucks and trailers.
(k) Protection against collision. Each end-fitted tank truck and each semitrailer shall be provided with properly attached steel bumpers or chassis extension to protect the tank, piping, valves, and fittings in case of collision.
(l) Conversion from other service to anhydrous ammonia. Tanks used for the transporting or storage of materials other than anhydrous ammonia shall be emptied of the material previously hauled, and the pressure in the tank shall be reduced to atmospheric pressure. If the material previously hauled in the container will be harmful to the anhydrous ammonia, then the tank shall be purged before being placed in anhydrous ammonia service, and all appurtenances shall be changed to comply with these regulations.
(m) Mobile containers. Except for tank trucks and semitrailers that comply with K.A.R. 4-10-5a, mobile containers shall be unloaded only at approved locations.
(n) Parking. Except in emergencies, tank trucks, semitrailers, or trailers transporting anhydrous ammonia shall not be parked in cities or in densely populated areas.
(o) Conversion of tanks from anhydrous ammonia to other service. Tanks used for the transportation of anhydrous ammonia shall be emptied and purged. Ammonia vapor shall be vented into an adequate portable supply of water and not into the atmosphere. An adequate supply of water shall be deemed to be five gallons of water per each one gallon of liquid ammonia. The aqueous ammonia solution resulting from the purging process shall be disposed of properly.

K.A.R. 4-10-5a. Tank trucks and semitrailers used to transport anhydrous ammonia for in-field delivery. (a) Tank trucks and semitrailers used to transport anhydrous ammonia may be used to fill an implement of husbandry with a capacity of 20,000 pounds or more. These trucks and semitrailers shall be exempt from K.A.R. 4-10-2j and K.A.R. 4-10-5(m) if the following requirements are met:
(1) Either the tank truck or the semitrailer transferring the anhydrous ammonia, or the implement of husbandry shall carry a container holding at least 100 gallons of water for whole-person rinsing if any anhydrous ammonia escapes.
(A) The water container shall be clearly marked for safety use, be readily accessible, and maintain the temperature of the water above freezing.
(B) The container and the water shall be visibly clean and free of debris.
(2) A container of water, separate from the water for rinsing specified in paragraph (a)(1) of this regulation, shall be present at the delivery site when loading the implement of husbandry. This separate container of water shall be used in accordance with K.A.R. 4-10-4(k) for the venting of anhydrous ammonia, shall be maintained to prevent the water from freezing, and shall hold no less than 100 gallons of water.
(3) Any tank truck, semitrailer, and implement of husbandry subject to this regulation may be inspected by the department of agriculture.
(4) Each tank truck, semitrailer, and implement of husbandry subject to this regulation shall meet all requirements of this regulation before loading, transporting, or off-loading anhydrous ammonia.
(5) When transferring anhydrous ammonia as authorized under this regulation, all vehicles, tanks, and hoses involved with the transfer shall be located according to the following limits:
(A) At a distance not less than 1,000 feet from any public assembly area; and
(B) at a distance not less than 1,000 feet from any occupied building; and
(C) at a distance not less than 50 feet from containers of petroleum products; and
(D) at a distance not less than 50 feet from any state or federal highway or any railway.
(6) The transfer of anhydrous ammonia shall not occur on any public roadway or the adjoining shoulder of a public roadway.
(b) All other regulations regarding the transportation of anhydrous ammonia shall apply unless in direct conflict with this regulation.
(c) Each meter used to weigh or measure anhydrous ammonia shall meet all of the requirements of weighing and measuring devices set forth in K.S.A. chapter 83, and amendments thereto, and any regulations adopted by the secretary.

K.A.R. 4-10-6. Systems mounted on implements of husbandry for the transportation of anhydrous ammonia.
Each system that is mounted on an implement of husbandry, and that is used for transporting anhydrous ammonia, shall meet the following requirements:
(a) Design pressure of containers.
(1) Each container shall be constructed in accordance with K.A.R. 4-10-2(b) and shall have a minimum design pressure of 250 psig.
(2) The shell or head thickness of any container shall not be less than 3/16 of an inch.
(3) Each container having a capacity in excess of 500 gallons capacity shall be equipped with suitable semi-rigid baffle

plates.

(b) Mounting containers.

(1) A suitable "stop" or "stops" shall be mounted on the vehicle or on the container to prevent the container from being dislodged from its mounting when the vehicle stops suddenly.

(2) A suitable "hold down" device shall anchor the container to the vehicle at one or more places on each side of the container.

(3) Containers mounted on four-wheel trailers shall have their weight distributed evenly over both axles.

(4) If the cradle and the tank are not welded together, suitable material shall be used between them to eliminate metal-to-metal friction.

(c) Container valves and appurtenances.

(1) Each container shall be equipped with a fixed liquid level gauge.

(2) Each container which has a capacity in excess of 250 water gallons shall be equipped with a pressure indicating gauge having a dial graduated from 0-400 psi.

(3) Each filling connection shall be fitted with an approved combination back-pressure check valve and excess-flow valve or an internal excess-flow valve.

(4) Each container which has a capacity of at least 250 gallons shall be equipped with an approved vapor return valve.

(5) Except for safety relief valves and those devices and openings specifically exempted by K.A.R. 4-10-2(e)(3) and K.A.R. 4-10-2(e)(4), each vapor or liquid connection shall be equipped with an approved excess-flow valve.

(6) Fittings shall be adequately protected from physical damage.

(7) Each hose and each connection installed in the bottom of a container shall not be lower than the lowest horizontal edge of the vehicle axle.

(8) The entire length of each hose shall be secured during transit in such a manner to prevent damage to any portion of the hose or to the connections.

(9) When hoses are removed, fittings shall be capped to prevent accidental discharge of ammonia.

(d) Marking of container.

(1) Each side and the rear of every container shall be marked with the words "caution ammonia" on a background of sharply contrasting colors in letters at least four inches high. In addition, the following information shall appear on each implement of husbandry:

(A) the owner's name;

(B) the owner's place of business;

(C) the phone number of a person to contact in an emergency; and

(D) an alphabetical or numerical identification symbol on the implement of husbandry.

(2) Each anhydrous ammonia container shall also have applied thereon a decal giving the following information:

CAUTION
ANHYDROUS AMMONIA
(UNDER PRESSURE)
READ CAREFULLY

(A) Keep away from pop-off value marked ⇑. This is a safety device and shall not be tampered with or adjusted.

(B) Stand "upwind" when working around equipment.

(C) Wear goggles and rubber gloves when transferring product and "bleeding" hoses.

(D) Do not fill tank in excess of 85% full.

(E) Never place any part of body in line with valve or hose openings. Use extreme care in handling hoses. Never lift a hose by the valve wheel.

(F) Slowly "bleed" hoses after transferring product.

(G) Close valves firmly but do not "wrench."

(H) Do not permit children near this equipment.

(I) Park equipment away from buildings or any possible fire hazards. Never allow tanks to be subjected to extreme heat.

(J) Do not attempt any repairs of this equipment. In event of any failure, call your dealer immediately.

(K) Do not operate this equipment until you have received instructions from your dealer.

(3) All valves shall be labeled or color coded as liquid or vapor valves.

(e) Safety attachment, construction, water, speed, and limitation on implements of husbandry.

(1) Each implement of husbandry shall meet the following requirements:

(A) Each implement of husbandry shall be securely attached to the pulling vehicle by a safety pin or ball of proper size. The safety pin or ball shall be of proper size for the weight pulled. The safety pin or ball shall be supplemented by suitable welded safety chains. The links of the safety chain shall be made of steel and shall:

(i) be at least 5/16 inch in diameter when the tank capacity is not more than 1,000 gallons;

(ii) be at least 3/8 inch in diameter when the tank capacity exceeds 1,000 gallons; or

(iii) have a breaking strength that exceeds the gross weight of the pulled vehicle. The safety chain shall be tied off to the pulling vehicle, and to the tongue of the pulled vehicle.

(B) Each implement of husbandry shall be constructed to follow substantially in the path of the pulling vehicle. The towed vehicle shall not swerve dangerously from side to side.

(C) A five gallon container of water shall be carried on all tanks containing anhydrous ammonia. When the temperature is near or below freezing, five gallons of water shall be carried inside the pulling vehicle.

(2) No person shall pull a tank containing anhydrous ammonia at a speed faster than is reasonable and safe under existing conditions.

(3) No person shall pull more than one implement of husbandry which is designed to contain anhydrous ammonia.

(4) Except in an emergency, no person shall park any implement of husbandry designed to contain anhydrous ammonia on any public street or other thoroughfare.

K.A.R. 4-10-7. Systems mounted on implements of husbandry for the application of anhydrous ammonia.

Each system utilizing containers mounted on implements of husbandry for the application of anhydrous ammonia shall meet the following requirements.

(a) Design pressure of containers.

(1) Each container shall be constructed in accordance with K.A.R. 4-10-2(b) and shall have a minimum design pressure of 250 psig.

(2) The shell or head thickness of any container shall not be less than 3/16 of an inch.

(b) Mounting of containers. All containers and flow-control devices shall be securely mounted.

(c) Container valves and appurtenances.

(1) Each container shall have a fixed liquid level gauge.

(2) The filling connection shall be fitted with either an approved combination back pressure check valve or a positive shut-off valve in conjunction with either an internal back pressure check valve or an internal excess flow valve.

(3) An excess flow valve shall not be required in the vapor connection whenever the valve is hand-operated and the diameter of the controlled orifice does not exceed 7/16 inch.

(4) Pressure regulation equipment may be connected directly to the tank coupling or flange, by utilizing a flexible connection between regulation equipment and the remainder of the liquid withdrawal system. Pressure regulation equipment not so installed shall be flexibly connected to the container shut-off valve.

(5) No excess flow valve shall be required in the liquid withdrawal service line between the contents of the container and the outlet of the shut-off valve whenever the diameter of the controlling orifice does not exceed 7/16 inch.

(6) Each container shall be equipped with an operational pressure-indicating gauge having a dial graduated from 0-400 psi.

(d) Vehicles used for application of anhydrous ammonia shall not be used for transportation of the product on roads or highways.

(e) A five gallon container for water shall be carried on all tanks containing anhydrous ammonia. When temperature is near or below freezing, five gallons of water shall be carried inside the pulling vehicle.

(f) Marking of container.

(1) Each side and the rear of every container shall be marked with the words "Caution Ammonia" or "Anhydrous Ammonia" on a background of sharply contrasting colors in letters at least four inches high. The name of the tank's owner, the place of business, and the phone number of a person to be contacted in an emergency shall be posted on the tank. Each implement of husbandry shall be identified by a sequential alphabetical or numerical figure affixed thereto.

(2) Each valve shall be labeled or color coded to designate liquid or vapor.

(3) Each anhydrous ammonia container shall have a decal, at least eight inches by ten inches in size, giving substantially the following information:

(A)

CAUTION
ANHYDROUS AMMONIA
(UNDER PRESSURE)
READ CAREFULLY

(B) Keep away from pop-off valve marked ⇑. This is a safety device and should not be tampered with or adjusted.

(C) Stand "up-wind" when working around equipment.

(D) Wear goggles and rubber gloves when transferring product and "bleeding hoses."

(E) Do not fill tank in excess of 85% full.

(F) Never place any part of body in line with valve or hose openings. Use extreme care in handling hoses. Never lift a hose by the valve wheel.

(G) Slowly "bleed" hoses after transferring product.

(H) Close valves firmly but do not "wrench".

(I) Do not permit children near this equipment.

(J) Park equipment away from buildings or any possible fire hazards. Never allow tanks to be subjected to extreme heat.

(K) Do not attempt any repairs of this equipment. In event of any failure, call your dealer immediately.

(L) Do not operate this equipment until you have received instructions from your dealer.

K.A.R. 4-10-15. Adoption by reference. The state board of agriculture bulletin entitled "Guidelines to Kansas Anhydrous Ammonia Regulations and Inspections" as published in May 1, 1988, is hereby adopted by reference. Copies of this material or the pertinent portions of it are available from the office of control, division of inspections of the state board of agriculture, Topeka, Kansas.

K.A.R. 4-10-16. Reactor units for production of ammoniated solutions. (a) Reactor units shall operate only at sites approved by the secretary.

(b) When removing anhydrous ammonia from tank cars or trucks to manufacture ammoniated solutions, portable reactor units shall be equipped with approved safety devices. These safety devices shall include:

(1) Approved air operated or manually operated remote controlled shut-off devices located both on the tank car connection immediately preceding the hose attachment and on the discharge side of the pump; and

(2) a back check pressure valve on the inlet for the portable reactor.

(c) When anhydrous ammonia is transported to a stationary reactor unit in an implement of husbandry, the implement of husbandry shall be equipped with a manually operated remote controlled shut-off device on the discharge valve immediately preceding any hose attachments, and a back check pressure valve installed in the rigid piping leading to the reactor unit at the point of connection for the transfer hose. The implement of husbandry shall be monitored at all times during the manufacturing process. The transfer hose shall be disconnected from the reactor unit when the reactor unit is not operating.

(d) The required air-operated or manually operated remote controlled shut-off device shall be tested prior to each production run of ammoniated solutions and at least once every 24 hours during the production run.

(e) The operator of a portable reactor unit shall notify the secretary in writing of each location where a portable reactor will be operating at least 72 hours prior to its operation.

(f) No person shall operate any reactor unit that does not comply with these regulations.

(g) Safety equipment. Each reactor unit shall have on hand the following equipment for emergency and rescue purposes:

(1) An approved, full-face type gas mask with ammonia canisters;

(2) a container or hydrant of clean water of sufficient size to immerse or cleanse an individual's body;

(3) one pair of gloves made of rubber or other suitable protective material;

(4) one pair of rubber or suitable plastic boots;

(5) one rubber or suitable plastic slicker or suitable rubber or plastic pants and jacket or both; and

(6) flexible, fitted, splash proof goggles.

(h) This regulation shall become effective on January 1, 1989.

K.A.R. 4-10-17. Proof of inspection seal.

(a) Proof of inspection seal shall be a decal or pressure sensitive seal which shows the date on which the permanent storage container was inspected.

(b) No proof of inspection seal shall be affixed to a permanent storage container unless the container has been inspected and found to comply with the applicable requirements of K.A.R. 4-10-1 *et. seq*., at the time of inspection.

(c) From and after May 1, 1989, no person shall fill a permanent storage container with anhydrous ammonia from a rail car or transport truck unless the permanent storage container has affixed to it a proof of inspection seal issued within the preceding 365 calendar days.